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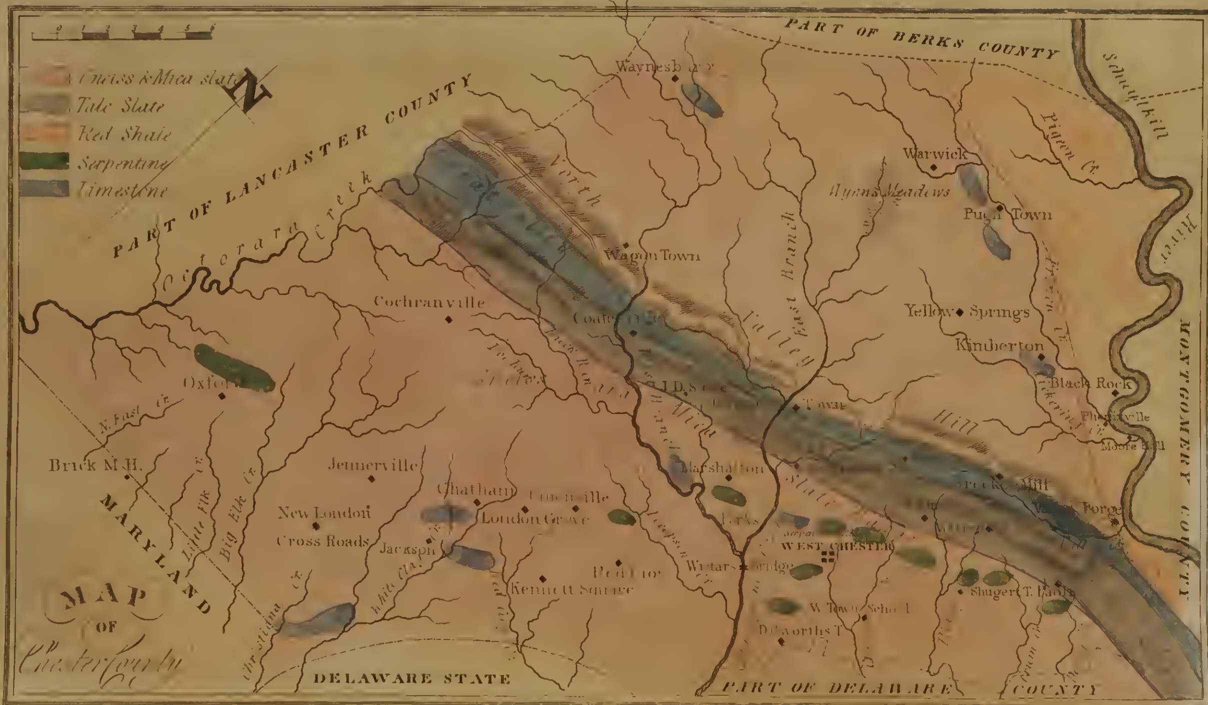
MAP OF Chester County
Talc Slate
Red Shale
Serpentine
Limestone
N
PART OF BERKS COUNTY
PART OF LANCASTER COUNTY
MONTGOMERY COUNTY
PART OF DELAWARE COUNTY
DELAWARE STATE
MARYLAND
Schuylkill River
Pigeon Cr.
Octorara Creek
Big Elk Cr.
Little Elk Cr.
N. East Cr.
East Branch
Valley
Hill
Waynesboro'
Warwick
Pugh Town
Wagon Town
Cochranville
Yellow Springs
Kimberton
Black Rock
Oxford
Brick M.H.
Jennerville
New London
Cross Roads
Chatham
London Grove
Jackson
Kennett Square
WEST CHESTER
W. Town School
Marshallton
Forge
Moore Hall

FLORA CESTRICA:

AN ATTEMPT

TO ENUMERATE AND DESCRIBE

THE FLOWERING AND FILICOID

PLANTS OF CHESTER COUNTY,

IN THE STATE OF PENNSYLVANIA.

WITH BRIEF NOTICES OF THEIR PROPERTIES, AND USES,

IN MEDICINE, DOMESTIC AND RURAL ECONOMY, AND THE ARTS.

BY WILLIAM DARLINGTON, M. D.

PRESIDENT OF THE CHESTER COUNTY CABINET OF NATURAL SCIENCE,
MEMBER OF THE AMERICAN PHILOSOPHICAL SOCIETY,
CORRESPONDENT OF THE ACADEMY OF NATURAL SCIENCES, AT PHILADA.
AND OF THE LYCEUM OF NATURAL HISTORY, AT NEW YORK, &c. &c.

Ore trahit quodcunque potest, atque addit acervo. HOR.

WEST-CHESTER, PENN.

PRINTED FOR THE AUTHOR, BY S. SIEGFRIED,

AND FOR SALE BY KIMBER AND SHARPLESS, PHILADELPHIA.

1837.

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1837

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TO THE

CULTIVATORS OF BOTANICAL SCIENCE

IN

THE COUNTY OF CHESTER,

THIS ATTEMPT

TO ENUMERATE AND DESCRIBE

THE FLOWERING AND FILICOID

PLANTS OF THE COUNTY

IS RESPECTFULLY DEDICATED BY

THE AUTHOR.

PREFACE.

The indulgent reception given to my *Catalogue* of the Phænogamous plants growing in the vicinity of the Borough of West-Chester, very naturally encouraged me to attempt a more complete *Flora* of the whole County. The industry and kindness of botanical friends, in exploring different sections of the County, and furnishing me with their collections, aided me greatly in the attempt; and I now submit to the lovers of botanical pursuits the result, such as it is, of my investigations.

There are many and obvious reasons why a work like this—prosecuted in the seclusion of a village residence—should be imperfect, and behind the improvements of the age: yet I feel that I have abundant cause to be grateful for the liberal and friendly assistance afforded me, whenever practicable, by a number of distinguished Botanists.

It may be in some measure perceived, by the annunciations in the course of the work, how numerous are my obligations, for specimens, and a knowledge of localities, to my friends in the County; and I gladly embrace this occasion to reiterate my acknowledgments for their kind attentions, and for the interest they have been pleased to manifest in the undertaking.

To Dr. Charles Pickering, of Philadelphia, I am most especially and deeply indebted, for the obliging promptitude and patience with which he aided me in my references to the valuable Herbariums under his charge, in that city; and my thanks are also due to the venerable Librarian of the Philosophical Society, for the facilities afforded in consulting the *Muhlenbergian* Herbarium, in possession of that Institution.

Since the return of Mr. Nuttall, from his Western expedition, I have had the benefit of his opinions, and suggestions, in relation to a number of our more difficult plants.

With Prof. Torrey, of New York, I have enjoyed the privilege of a botanical correspondence for some twelve years past; and those who are acquainted with the eminent attainments of that gentleman will not need to be told, that it must be my own fault if I have not profited largely by the intercourse. His judicious remarks, and his frank and liberal communications, have ever been to me a source of agreeable interest and instruction.

To the kindness of Dr. A. Gray, of the same city, I am also indebted for the use of several important works which at the time were not elsewhere to be obtained, in the U. States.

From my estimable Correspondents, Prof. C. W. Short, of Kentucky, and the Rev. M. A. Curtis, of North Carolina, I have received numerous specimens of Western and Southern plants, which have been exceedingly useful, on comparison, in enabling me to determine some of our doubtful species.

My obligations, for assistance, extend even beyond the Atlantic.—To Dr. F. Boott, of London, I owe many acknowledgments for botanical favors,—and especially for his kindness in verifying a number of our most obscure and difficult plants, by a comparison with those in the *Linnæan, Banksian,* and other authentic Herbariums, in that city.

I have been also favored with books, and many authenticated specimens illustrative of North American Botany, by Sir W. J. Hooker, the accomplished Professor of our Science in the University of Glasgow, Scotland,—a gentleman whose attention has been particularly directed to the plants of this hemisphere,—and whose liberality and urbanity have won the hearts of all American Botanists who have had the pleasure of his correspondence.

An apology will doubtless be expected from me, for still adhering to the *Linnæan arrangement*, when the modern botanical world have so generally abandoned it for the *Natural method.* I am fully conscious of the old-fashioned garb in which this work is arrayed, and have a thorough conviction of the value and importance of studying plants according to their natural affinities: But, observing that the Natural method is yet kept, as it were, in a continual state of fermentation, by the labors and researches of the great Masters in the Science,—and feeling my inability to co-operate, or aid in adjusting its details,—I thought it most advisable, in the present attempt, to adhere mainly to the Linnæan classification. Whilst I freely admit that the true science of vegetables can only be attained by a well-disciplined and philosophical investigation of their structure, functions, and natural affinities, I cannot help thinking that even the superficial knowledge of genera and species, which is so readily acquired by the Linnæan system, may be advantageous to the cause, by exciting an early interest in learners, and facilitating the first steps of the uninitiated. When the young recruits are once securely *enlisted*, we may venture to exact a more rigid *discipline.* In the meantime, a good foundation may be laid for a scientific knowledge of plants, by the study of such admirable elementary works as those of De Candolle, or Richard,—and that recently published in our own language, by Dr. A. Gray, of New York.

Notwithstanding the arrangement according to the Sexual System is confessedly *artificial*, the reader cannot fail to remark how many of those great families of plants which are obviously *natural*, are yet preserved under it, nearly or quite entire. By doing a slight violence to the Linnæan method (as I have ventured to do, in this work, at the suggestion of my friend, Dr. Pickering), it will be seen that the genera belonging to the following eminently Natural Orders, may be all kept together—viz: *Cyperaceæ, Gramineæ, Borragineæ, Umbelliferæ, Rosaceæ, Pomaceæ, Amygdaleæ, Labiatæ, Cruciferæ, Leguminosæ, Compositæ, Orchideæ, Filices,* and *Lycopodiaceæ.* These orders comprise nearly half the genera, and more than half the species, enumerated in the present work. In addition to the foregoing, it will be found that the genera (84 in number) belonging to 30 additional Natural Orders, and comprising about 180 species, are all grouped together under the Linnæan arrangement; and a large proportion of

the genera belonging to several other natural orders, will also be found in company. In short, upwards of 800 plants out of 1073, enumerated in this Flora, will be found congregated together, by a slight modification of the Sexual System, almost as completely as under the Natural method. Having them thus grouped, their affinities and true character may be studied as thoroughly, and nearly with the same convenience, as under any natural arrangement.

It will be observed, that I have throughout referred to, or used as a text-book, Dr. Beck's excellent work on the Botany of the Northern and Middle States,—citing it for all the species which are here given by the same names: But, in citing Dr. B. (or any other Author) for a species, it must not be supposed that I have quoted him *verbatim*. I have used, without hesitation, the language and descriptive phrases of others, where they appeared most appropriate; but have taken the liberty to modify, or add to, such descriptions, whenever my own observations seemed to warrant it. The only innovation in which I have indulged, in the use of descriptive terms, is in the employment of the words *ovate*, and *ovoid*, to convey distinct ideas,—as explained in the Glossary:—a distinction which appears to me to be both convenient and practically useful.

Instead of placing the *Cultivated Plants* in an Appendix, as was done in my Catalogue, I have thought it best to insert them in their proper places throughout the work; but, in order to enable the reader to distinguish them at a glance, I have had the descriptions printed in *italic*,—and have thus rendered the cultivated species, in some sort, as distinct from the others, in the book, as they are in our fields and gardens.

I was unfortunate in not receiving some works, which I wished to consult, until it was too late to profit by their contents. This was particularly the case with Kunth's Agrostographia, and the 5th Part of De Candolle's Prodromus. The want of the latter I especially regret,—as I think the distinguished Professor of Geneva has materially improved upon the labors of Lessing, among the Syngenesious plants.

Prefixed to this volume is a small map of the County, intended as a guide to some of the most interesting localities,—as well as to indicate their relative positions; and, with the further object of promoting the study of the Vegetation in connection with the character of the Rocks beneath, I have had the map colored geologically, in conformity with the views of Prof. Henry D. Rogers, the Geologist now in the service of this State,—who politely designated the geological features, and the order of coloring, here exhibited. It is proper to observe, however, that the range of hills, on the South side of the great Limestone Valley, usually called *Mica-slate* in the text, is designated as *Talc-slate*, by the coloring on the map.

West-Chester, Pa.
April, 1837.

☞ The reader will please to correct a palpable typographical error, in the second line of the paragraph at the foot of page 611—where instead of "250 Natural Orders," it should read 265 Natural Orders.

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AND OF WHOM THE

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GLOSSARY

OF THE

PRINCIPAL BOTANICAL TERMS USED IN THIS WORK.

☞ The reader will bear in mind, that where *compound* descriptive terms are used, the *last member* of the compound word is intended to give the *predominant character;* and that the word or syllable *prefixed*, merely indicates a *modification* of that character;—as, for example, "*ovate-lanceolate*" signifies *lanceolate, but inclining somewhat to ovate*—whilst "*lance-ovate*" means *ovate with something of the lanceolate form*, &c. So of colors: "*yellowish-green*," "*bluish-green*," &c. signify that green is the prevailing hue,—but that it is tinged with yellow, blue, &c.

Abortion, an imperfect developement of any organ.
Abortive, not arriving at perfection; producing no fruit.
Abrupt, not gradual; terminating suddenly
Abruptly acuminate, suddenly narrowed to an acumination.
Abruptly pinnate, see *Even-pinnate*.
Accessory, additional, or supernumerary.
Accumbent cotyledons, having the radicle applied to the cleft, or recurved along one of the edges, of the cotyledons;—as in some Tetradynamous or Cruciferous plants.
Acerose, linear, stiff and sharp, like the leaves of Juniper.
Acicular, needle-shaped.
Aculea'te, prickly.
Acumina'te, ending in a produced tapering point.
Acumination, an extended tapering acute point.
Acute, sharp; ending in an angle, or point; not rounded.
Adnate, adhering laterally, fixed or growing to.
Aestivation, the mode in which sepals and petals are arranged in the flower-bud
Aggregated, crowded, or standing together on the same receptacle, but not compound.
Akene, a 1-seeded fruit with a dry indehiscent pericarp,—often bony or nut-like.
Alate, winged; having a membranous border.
Alternate, not opposite; placed alternately on the axis, or receptacle.
Alveolate, having cells like a honey-comb.
Ament, a slender spike of naked and usually diclinous flowers, with imbricated scales, or bracts, often doing the office of pedicels.
Amp'lexicaul, embracing or clasping the stem.
Anastomosing, applied to branching vessels which inosculate, or unite again, like network.
Incipital, two-edged; somewhat flatted, with two opposite edges.
Androgynous, having staminate and pistillate flowers distinct, but on the same plant, or spike.
Angulate, having angles, or corners, mostly of a determinate number.
Anisate, having the odor or taste of Anise-seed.
Annotinous, applied to leaves, &c. which are renewed every year.
Annual, living or enduring but one year.
Annular, having the form of a ring.
Annulate, having a ring.
Anomalous, not according to rule or system; forming an exception to usual appearances, or structure.
Anther, the knob, or capsule, containing the pollen; usually supported on a filament.
Antheridium, the connate anther-like mass, in the flowers of the *Asclepiadeæ*, or Asclepias Tribe.
Antheriferous, bearing Anthers.
Apetalous, destitute of petals; not having a corolla.
Apex, the summit, end, or point.
Aphyllous, without leaves.
Appendiculate, having some appendage.
Appressed, pressed to, or lying close against.
Approximate, growing or situated near each other.
Aquatic, growing naturally in water, or wet places.
Arachnoid, resembling a spider's web.
Arborescent, approaching the size of a tree.
Arcuate, curved or bent like a bow.
Areola, a small cavity;—as in the base of some akenes.
Arid, dry or parched; as if destitute of sap.
Arillate, having an arillus.
Arillus, an expansion of the funiculus or seed-stalk, forming a loose (and often fleshy) coating of the seed.
Aristate, awned; having awns.
Armed, having thorns, or prickles,

Aromatic, having a spicy flavor, or fragrance.
Articulated, jointed; connected by joints.
Articulations, joints; the places at which articulated members are separable.
Ascending, rising from the ground obliquely.
Assurgent, rising in a curve from a declined base.
Attenuated, tapering gradually till it becomes slender.
Auriculate, having rounded appendages at base, like ears.
Awn, a slender bristle-like process,—common on the chaff of grasses, sometimes on anthers, &c.
Awned, furnished with awns, or bristle-like points.
Awnless, destitute of awns.
Axil, the angle between a branch and stem, or leaf and branch, on the upper side.
Axillary, growing in, or proceeding from, the axil.
Axis, a central stem, or peduncle;—or, a real or imaginary central line extending from the base to the summit.
Baccate, berried; becoming fleshy or succulent, like a berry.
Bald akenes, naked at summit; destitute of pappus or crown.
Banner, the vexillum or upper petal in a papilionaceous flower.
Barb, a straight process, armed with one or more teeth pointing backwards.
Beak, a terminal process, like a bird's bill.
Beaked, having, or terminating in, a beak.
Bearded, crested or furnished with parallel hairs,—as in the flowers of Iris, Viola, &c.
Berry, a pulpy valveless fruit, in which the seeds are imbedded.
Bibracteate, having two bracts.
Bicuspidate, ending in two sharp points.
Bidentate, furnished with two teeth.
Biennial, living two years,—in the second of which the flowers and fruit are produced,—and then dying.
Bifurious, in two series, or opposite rows; pointing in two directions.
Bifid, two-cleft, or split into two segments.
Bifistular, having two parallel tubes.
Bifoliate, having or producing two leaves.
Bifurcate, forked; ending in two branches.
Bi-gibbous, having two hunches, or gibbous productions.
Biglandular, having or producing two glands.
Bilabiate, having two lips.
Bilamellate, having two lamellæ, or thin plates.
Bilocular, having two cells.
Bipartible, separable spontaneously into two parts.
Bipartite, two-parted; divided into two segments more than half way to the base.
Bipinnate, twice pinnate; the common petiole having opposite branches, and those branches bearing opposite leaflets.
Bipinnately, in a bipinnate manner.
Bipinnatifid, the common petiole having opposite pinnatifid branches, or segments.
Bipinnatifidly, in a bipinnatifid manner.
Birostrate, furnished with two beaks.
Bisetose, having two bristles.
Bisulcate, having two grooves or furrows.
Biternate leaf, twice ternate; the common petiole 3-parted, and each division bearing three leaflets.
Bivalved, having two valves.
Biventricose, having two bellied or distended portions.
Bloom, a fine powdery coating on certain fruits, &c., as the plum.
Border of a Corolla, the spreading brim of a corolla of more than one petal.
Bowl-shaped, hemispherical and concave or hollow.
Brachiate, having the branches spreading, opposite and decussate.
Bract, floral leaf; a leaf among or near the flowers, and usually differing in size and appearance, from the other leaves.
Bracteate, furnished with bracts.
Branchlets, small branches, or subdivisions of branches.
Bristles, stiff hairs, straight, or hooked.
Bulb, a kind of bud, formed of numerous fleshy scales or coats, and usually seated on the neck of the root.—sometimes in the axils.
Bulbiferous, bearing or producing bulbs.
Bulbous, formed of, or like a bulb
Bullate leaf, having bubble-like convexities on the upper surface, with corresponding cavities beneath.
Caducous, falling off earlier than usual for such organs.
Calcarate, spurred; having a process like a horn, or spur.
Callous, firm and gristle-like.
Callus, a compact gristle like tubercle or substance.
Calyciform, shaped like a calyx.
Calyculate, having an additional outer calyx.
Calyptra, the cap or hood (resembling the extinguisher of a candle) on the fructification of the Mosses.
Calyx, the flower-cup, or outer (and sometimes the only) covering of a flower,—usually green, and embracing all the other parts.
Campanulate, in the form of a bell.
Canaliculate, channelled or furrowed.
Canescent, hoary; covered with a whitish pubescence.
Capillaceous, and *Capillary*, long and fine like a hair.
Capitate, head-form; growing in a head.
Capsule, a dry hollow seed-vessel, opening by valves.
Carinate, keeled; having a ridge on the back resembling the keel of a boat.
Carnose, fleshy; more firm than pulp.
Carpel, a little fruit; usually a partial pistil, or simple constituent portion of a compound fruit.

Cartilagineus, hard yet somewhat flexible, like gristle.
Caryopsis, a fruit where the pericarp is very thin, and adheres firmly to the integument of the seed,—as in Wheat, Barley, Carex, &c.
Cauda, a tail. *Caudate*, having a tail.
Caulescent, having an evident or true stem.
Cauline, belonging to, or growing on, the main stem.
Cellular, made up of little cells or cavities.
Cernuous, nodding, or somewhat drooping.
Cespitose, many stems growing from the same root, forming a tuft, or tussock.
Chaff, a dry thin membrane; the seed covers of the grasses, or the bracts on the receptacle of compound flowers, &c
Chaffy, bearing chaff; or resembling chaff.
Channels, longitudinal grooves; the interstices between the ribs on the fruit of umbelliferous plants.
Channelled, having longitudinal grooves.
Chartaceous, resembling paper, in texture.
Cicatrice, the scar or mark, at the point of connection, left after the fall of a leaf, &c.
Cilia, hairs arranged like eye-lashes, along the margin of a surface.
Ciliate, fringed, or edged with parallel hairs, like eye-lashes.
Ciliate-serrate, having serratures resembling cilia.
Cinereous, of the color of wood-ashes.
Circinate, with the apex rolled back on itself, like the young fronds of a fern.
Circumscissed, cut round transversely, or opening horizontally, like a snuff box.
Cirrhose, bearing tendrils; or terminating in a tendril.
Class, the highest or primary division of plants or other natural objects, in a System.
Clavate, club-shaped; growing larger towards the summit.
Claw, the taper base of a petal, in a polypetalous corolla.
Cleft, split or divided less than half way to the base.
Clypeate, of the form of a buckler or shield.
Coætaneous, appearing at the same time with the leaves.
Coarctate, contracted, or crowded into a narrow compass.
Cochleate, coiled spirally, like a snail-shell.
Collateral, side by side; on the same side.
Colored, of any other color than green.
Column, the axis or central pillar of a capsule;—or the combined filaments and style of a Gynandrous flower.
Commissure, the line of junction of two bodies,—as the face of the carpels, in umbelliferæ.
Common (petiole, peduncle, &c.), comprising or sustaining several similar subordinate parts.
Comose, having a cottony or silky tuft, or top-knot.
Compact, condensed or pressed together.
Complete flower, having both calyx and corolla.
Compound, made up of similar simple parts.
Compound flower, consisting of several Syngenesious florets, seated on a common receptacle, and embraced by an involucre, or many-leaved common calyx.
Compound leaf, having each leaflet, or lamina, articulated with the petiole.
Compound umbel, an umbel in which each primary peduncle, or ray, bears a small umbel at summit.
Compressed, flatted, as if squeezed or pressed,—with the edge in front, in akenes of compound flowrs. See *Obcompressed*.
Concave, presenting a hollow or depressed surface.
Conduplicate, doubled, or folded together, like the leaves of a book.
Cone, the woody ament of the Pines; also the fruit of the Hop, &c.
Conic, *Conical*, or *Conoid*, having the figure of a cone.
Confluent, blended, or running into each other.
Conformable, having the same form.
Congener, belonging to the same genus, or family.
Conglomerate, clustered or heaped together.
Connate, growing together or cohering,—especially at base.
Connectivum, the organ which connects the two cells of an anther,—conspicuous in the *Labiatæ*.
Connivent, meeting, or bending towards each other.
Constant, invariable; never failing, or wanting.
Contiguous, so near as to seem to touch.
Continuous, without interruption, or articulation.
Contorted, twisted; or obliquely overlapping.
Contracted, narrowed, or reduced into smaller compass.
Contrary dissepiment, not parallel with the valves of the pericarp.
Convex, presenting an elevated rounded surface.
Convolute, rolled into a cylindric form.
Coraloid, resembling coral, in appearance.
Cordate, heart shaped, with the sinus at base.
Cordate-oblong, oblong, with a cordate base.
Cordate-ovate, ovate, with the base somewhat cordate,
Coriaceous, tough and leather-like.
Corneous, having the consistence or appearance of horn.
Corniculate, having little horns, or spurs.
Cornute, having appendages like horns.
Corolla, the delicate inner covering of the flower, standing between the calyx and stamens, and mostly colored;—often called the flower, or blossom, by way of eminence.

Corrugated, contracted into wrinkles.
Cortical, belonging to the bark.
Corymb, a kind of raceme resembling an umbel,—with the pedicels of various length, and bearing the flowers all on the same level at summit.
Corymbose, in the manner of a corymb.
Corymbulose, having the flowers in little corymbs.
Costate, ribbed.
Cotyledons, seed-lobes; in vegetation often becoming the first, or seminal leaves.
Creeping, running along the ground, and putting forth small roots.
Crenate, notched on the edge, with the segments rounded, and not inclining towards either extremity.
Crenulate, very finely crenate.
Crested, having an appendage somewhat like a cock's comb.
Crisp, curled; wavy at the edges.
Cristate, crested.
Crowded, thick set; standing in close order.
Crown, a circle of petaloid appendages at the throat of a corolla,—or of short chaffy scales at the summit of an akene.
Crowned, furnished with appendages resembling a crown.
Crown-form, resembling the figure of a crown.
Cruciate, or *Cruciform*, having 4 petals arranged like a cross; as in Tetradynamous flowers.
Cruciferous, bearing cruciate or cruciform flowers.
Crustaceous, having a dry brittle shell.
Cryptogamous, belonging to the class Cryptogamia; destitute of visible flowers.
Cucullate, in the form of a cowl;—the edges rolled in so as to meet at base, and expanding above,—like a hood thrown back.
Culm, the stem of the Grasses, and Cyperaceæ.
Cuneate, or *Cuneiform*, wedge-shaped; tapering to the base like a wedge.
Cupule, the cup like involucre of the acorn, &c.
Cusp, a stiffish tapering sharp point.
Cuspidate, tapering gradually to a straight slender sharp point.
Cuticle, the outer skin,—usually thin and membranaceous.
Cylindric, round and not tapering.
Cyme, a kind of panicle depressed nearly to the form of an umbel,—with the principal peduncles rising from the same centre, but the subdivisions irregular
Cymose, having the flowers in cymes.
Decandrous, having ten stamens.
Deciduous, falling off at the usual time; later than caducous.
Declinate, or *Declined*, bent off horizontally; or curved downwards.
Decompound, twice compound; composed of compound parts.
Decumbent, leaning upon the ground, with the base only erect.
Decurrence, a running down or backwards.
Decurrent leaf, when the two edges are continued down the stem, like wings.
Decussate, growing in pairs, which alternately cross each other.
Definite, of a constant or determinate number.
Deflected, bent off, or downwards.
Dehiscent, gaping, or opening naturally at maturity.
Deltoid, triangular in the outline,—like the Greek letter *Delta*.
Dense, close, or compact.
Dentate, toothed; edged with tooth-like projections.
Denticulate, having very small teeth.
Depauperated, with a starved or stunted inflorescence; few-flowered.
Depressed, flatted vertically, or pressed in at top.
Depressed-globose, globose, with the base and apex flatted.
Diadelphous, having the filaments united in two parcels, with a papilionaceous corolla.
Diandrous, having two stamens.
Diaphanous, transparent; permitting light to pass through.
Diaphragmatic, having a transverse membrane, like a Diaphragm.
Dichotomal, situated in the fork of a dichotomous stem, or branch.
Dichotomous, forked; regularly divided, and subdivided, in two equal branches.
Diclinous, having the stamens and pistils in distinct flowers, whether on the same or different plants.
Didymous, twin; growing in pairs and partially united.
Didynamous, having two long, and two short, stamens,—in a ringent or personate corolla.
Diffuse, spreading in a loose irregular manner.
Digitate leaf, when a simple petiole connects 5 or more distinct leaflets, finger-like, at its summit.
Digynous, having two pistils, or two distinct stigmas.
Dilated, made wider; stretched, or expanded.
Dimidiate, halved; as if one half had been cut off.
Dingy, of a dull soiled or leaden-brown color.
Dioicous, having the staminate and pistillate flowers on distinct plants.
Dioicously polygamous, having the perfect and imperfect flowers on different plants.
Discoid flower, having a disk without rays.
Disk, the surface of a leaf;—or the face, or central part, of a compound flower.
Dissepiment, the partition between the cells of seed-vessels.
Dissilient, bursting open with a spring.

Distant, having a larger intervening space than usual.
Distichous, two-rowed; bearing leaves, flowers, &c. in two opposite rows.
Distinct, separate; not connected with each other, nor with any contiguous organ.
Divaricate branches, spreading so as to form more than a right angle, with the stem above.
Divergent, spreading widely; making a right angle, or nearly so, with the stem.
Dorsal, Belonging to, or growing on, the back.
Dorsally compressed, compressed or flatted on the back.
Dots, minute tubercles or elevated points.
Dotted, covered with dots, or small elevated points.
Down, soft pubescence.
Drooping, inclining downwards, more than *nodding*.
Drupe, a fleshy or succulent pericarp without valves, containing a nut or stone.
Drupel, a little drupe; a constituent portion of a compound berry,—such as that of Rubus.
Exaudate, destitute of a cauda or tail.
Echinate, hedgehog-like; covered with prickles.
Elliptic, oval; longer than wide, with the two ends tapering equally.
Elongated, exceeding the usual or average length.
Elongating, becoming gradually and finally elongated.
Emarginate, having a notch at the end.
Enneandrous, having nine stamens.
Ensiform, sword-shaped; two-edged and tapering from base to apex.
Entire, whole and even at the edge; without incision, or tooth.
Envelope, an integument or covering.
Epigynous, situated on, or at the summit of, the ovary.
Equal, similar parts equal among themselves,—as calyx-segments, sepals, petals, &c.
Eroded, *Erose*, Irregularly notched, as if gnawed.
Esculent, eatable.
Etiolation, the blanching of plants,—or rendering them white by the exclusion of light; as is practised with Celery.
Evanescent, disappearing.
Even-pinnate leaf, having the leaflets all in pairs, or without a terminal odd one
Ever-green, continuing green, and persisting all the year.
Exfoliate, to throw off layers, or plates,—as bark, &c.
Exsert, or *exserted*, projecting, or protruding out of.
Falcate, sickle-shaped; curved like a Sickle, or Scythe.
Fan-shaped, cuneate below, and spreading above,—like a lady's fan.
Farinaceous, mealy; reducible to a meal-like powder.
Fascicle, a bundle; the foot-stalks proceeding from the same point.
Fasciculate, growing in bundles, or bunches, from the same, or nearly the same, point.
Fastigiate, level-topped: the summits of the branches all rising to the same height.
Ferruginous, of the color of rust of iron.
Fertile, having perfect pistils, and producing fruit.
Fibrous, composed of fibres, or thread-like processes.
Filament, that part of the stamen (usually thread-like) which supports the anther.
Filicoid, fern-like; belonging to or resembling ferns.
Filiform, very slender and terete, like a thread.
Fimbriæ, fringes, or fringe-like processes.
Fimbriate, finely divided at the edge, like fringe.
Fissure, a slit, crack, or narrow opening.
Fistular, hollow and terete, or tubular.
Flabelliform, fan-shaped—which see.
Flaccid, too limber to support its own weight.
Flagelliform, long slender and pliable,—like a whip-lash.
Flexuose, serpentine, or curved several times in succession.
Flocculent tomentum, condensed in little *flocks*, flakes, or bunches.
Floral, belonging to, or situated, near a flower.
Floret, a little flower; one of the number in aggregated, or compound, flowers.
Floriferous, bearing flowers.
Foliaceous, of a leafy form and texture; resembling a leaf.
Follicle, a capsular fruit opening longitudinally by a suture on one side.
Foramen (plural, *Foramina*), a roundish hole, or opening.
Free, not adhering to each other, nor to any adjacent organ.
Frond, the leaf, or leaf like expansion, of cryptogamous plants.
Frondose, leafy, or with leaf-like appendages.
Fructification, the flower and fruit, with their parts.
Frutescent, becoming shrubby.
Fruticose, shrubby.
Fugacious, fleeting; of short continuance.
Fulvous, tawny, or tan-colored.
Fungous, of a rapid growth and soft texture, like *Fungi*.
Funiculus, the little cord by which seeds are attached to the placenta, or receptacle.
Funnel-form, tubular below, and expanding at summit.
Fuscous, greyish brown.
Fusiform, spindle-shaped; terete and tapering.
Galea, a helmet; the upper lip of a ringent corolla.
Galeate, helmeted; resembling a casque, or helmet.
Generic, pertaining or relating to a genus.
Geniculate, forming an angle at the joints, like a bent knee.

Genus (plural, *Genera*), a family, or number of plants which agree with one another in the structure of the flower and fruit.

Germ, the name formerly given to the ovary.

Germination, the sprouting of a seed.

Gibbous, hunched, or swelled out, on one or both sides.

Glabrous, smooth; without pubescence or roughness.

Gland, a small roundish appendage, which often secretes a moisture.

Glandular, furnished with glands.

Glandular-hispid, or *Glandular-pubescent*, hairy or pubescent, and the hairs tipped with glands.

Glanduliferous, bearing or producing glands.

Glaucous, silvery; pale bluish- or greenish-white; covered with a greenish-white mealiness.

Globose, spherical; round on all sides.

Glomerate, densely clustered in small heaps, or irregular heads.

Glomerules, small dense roundish clusters.

Glumaceous, chaff-like; resembling chaff, or glumes.

Glume, chaff, or husk; applied more particularly to the outer or lower floral covering of the grasses.

Glumose, having glumes.

Glutinous, viscid; covered with an adhesive fluid.

Gramineous, grass-like; resembling grasses.

Graniferous, bearing a grain, or grains.

Granular, formed of grains.

Gymnospermous, having the seeds apparently naked.

Gynandrous, having the stamens growing on, or cohering with, the pistil.

Habit of plants, their general external appearance and mode of growth, by which they are recognized at sight.

Habitat, or *Habitatio*, the native place of growth of plants.

Halved, one-sided, as if one half had been cut off.

Hastate, shaped like a halbert; lanceolate, with a divaricate lobe on each side, at base.

Head, a dense sessile cluster, or roundish collection of flowers.

Heptandrous, having seven stamens.

Herbaceous, not woody; of a tender consistence, and destructible by frost.

Herbarium, a collection of dried specimens of plants.

Heterogamous heads, heads of Syngenesious flowers containing Florets of a different sexual character.

Heterophyllous, having leaves of different forms.

Hexandrous, having six stamens of equal length.

Hilum, the scar or mark on a seed, at the point of attachment to the funiculus, or placenta.

Hirsute, rough-haired; clothed with stiffish hairs.

Hispid, bristly; beset with rigid spreading bristle-like hairs.

Hoary, covered with a white pubescence.

Homogamous heads, heads of Syngenesious flowers in which all the Florets are of one and the same sexual character.

Homophyllous, having the leaves all of a similar figure.

Hooded, see *Cucullate*.

Horn, a process, or elongation, resembling a horn. See *Spur*.

Horny, of a texture or consistence like horn. See *Cornecus*.

Hybrid, a mule; a mongrel partaking of the nature, and produced by the mixture, of two different species, or varieties.

Hypogæan, situated, growing, or remaining under ground.

Hypogynous, inserted under the base of the ovary, and free, or not adhering to the calyx or pistil.

Icosandrous, having about 20 stamens (more or less) which are perigynous, —*i. e.* growing to, or inserted on, the calyx.

Imbricate, or *Imbricated*, lying closely over each other, like shingles on a roof, or scales on a fish.

Imperfect flower, wanting either stamen or pistil.

Incised, cut, or gashed; separated by incisions.

Inclinate, or *Inclined*, bent towards each other, or towards something different.

Included, wholly contained in a cavity;—the opposite of *exserted*.

Incomplete flower, wanting either calyx or corolla.

Incrassate, thickened upwards, or towards the summit.

Incumbent, lying upon, against, or across.

Incumbent anther, attached at or near its middle and lying horizontally across the summit of the filament.

Incumbent cotyledon, having the radicle bent over and applied to the back of one of the cotyledons;—as in many Tetradynamous or Cruciferous plants

Incurved, bent or curved inwards.

Indefinite, of no certain, constant, or determinate number.

Indehiscent, not opening naturally.

Indigenous, native; growing originally in a country.

Indurated, hardened; become hard.

Indusium (plural, *Indusia*), the membrane or veil which covers the young *Sorus* (or cluster of fruit) on the leaves of *Ferns*.

Inferior calyx, having the ovary above and free in the bosom of the calyx.

Inferior ovary, situated below the calyx; *i.e.* adnate to the *tube* of the calyx, and consequently bearing the *segments* at its summit.

Inflated, distended or swelled like a blown bladder.

Inflected, or *Inflexed*, bent suddenly inwards.

Inflorescence, the disposition or arrangement of flowers and their footstalks on a plant; as Umbel, Panicle, Raceme, &c.

Inserted, fixed upon; or growing out of.
Internode, the space between nodes or joints.
Interrupted, having intervals; or the continuity broken.
Interruptedly pinnate, having smaller leaflets between each pair of larger ones.
Inversely, in a contrary position; end for end, or upside down.
Involucel, a partial involucre; the leaflets at the base of a partial umbel, or subdivision of a compound umbel.
Involucellate, having involucels.
Involucrate, having an involucre.
Involucre, an assemblage of floral leaves, surrounding or accompanying certain forms of inflorescence —usually verticillate at the foot of an umbel,—or densely imbricated, like scales, and embracing the heads of Syngenesious flowers.
Involute, rolled inwards.
Irregular, differing in figure, size, or proportion of parts among themselves; as the lobes of a corolla, &c.
Keel, a longitudinal central ridge on the back of a leaf, sepal, &c. resembling the keel of a boat; also the lower petal of a papilionaceous flower.
Keeled, having a keel. See *Carinate*.
Kernel, the nucleus, or seed contained in a nut.
Knot, a solid, inseparable, and often swelling joint;—as in the stem of grasses, &c.
Labiatæ, or *Labiate flowers*, having the corolla (and sometimes the calyx) divided at summit into an upper and lower lip.
Lacerate, divided into irregular segments, as if torn.
Laciniate, jagged; as if irregularly cut or torn on the margin.
Lactescent, milky; containing a milky or whitish juice.
Lamellate, divided or dilated into thin plates.
Lamina, a thin layer or plate; the expanded or flat portion of a leaf, or petal, as distinguished from the petiole, or claw.
Lanceolate, tapering gradually from near the base to the apex, like the head of an ancient Lance, or Spear.
Lance-linear, *Lance-ovate*, &c. linear, &c. with a little of the lanceolate form.
Lance-ovoid, egg-shaped, or terete and swelling below, with a tapering apex.
Lanuginous, clothed with a loose wool.
Lateral, at the side.
Laterally compressed, compressed or flatted on the sides.
Latticed, crossing each other obliquely, like net work.
Lax, loose, or limber; not compact.
Leaflets, partial leaves; the small constituent leaves of a compound leaf.
Leaf-like (*foliaceus*), an expansion resembling a leaf.
Leafy (*foliosus*), furnished, or abounding, with leaves.
Legume, a membranous, or coriaceous, seed-vessel of two valves, with the seeds affixed along the upper suture, only.
Leguminous, bearing or producing legumes.
Lenticular, having the form of a lens; compressed, but convex on both sides.
Lepanthium, the nectary, or crown-like leaflets, in the flowers of the Asclepiadeæ, or Asclepias Tribe.
Ligneous, woody; of a firm woody texture.
Ligulate, strap-shaped, or ribbon-shaped; flat and linear.
Ligule, the membranous appendage at the base of the leaf, or summit of the sheath, in grasses.
Liliaceous, lily-like; bearing flowers resembling the Lily.
Limb, the summit of a monosepalous calyx; or the upper spreading part of a monopetalous corolla.
Line, the twelfth part of an inch.
Linear, of an uniform width; long and narrow with parallel sides.
Linear-lanceolate, &c. partaking of both forms, but more of the latter.
Lip, the upper or under division of a labiate flower; or the lower and inner perianth-segment of many gynandrous flowers.
Lobe, the division of a petal, or leaf.
Lobate, or *Lobed*, cut or divided into lobes.
Loment, an indehiscent legume, contracted between each seed, and finally separating at the joint-like contractions.
Longitudinal, lengthwise; parallel with the axis,—or in a direction from the base towards the summit, or apex.
Lunate, or *Lunulate*, having the figure of a new moon.
Lyrate, pinnatifid, with the terminal segment largest, and mostly rounded.
Marcescent, withering and shrivelling before it falls off.
Margin, the edge or circumference of a leaf, or other expansion.
Marginal, belonging to, or situated at, the margin.
Marginate, or *Margined*, having a border or edging of a color or texture different from that of the disk.
Melliferous, producing or containing honey.
Membranaceous, or *Membranous*, thin, flexible and often slightly translucent
Midrib, the main central nerve of a leaf,—apparently a continuation of the petiole.
Monadelphous, having the filaments all united in one set,—usually forming a tube.
Monandrous, having a single stamen.
Moniliform, arranged like the beads of a necklace.
Monoclinous, having the stamens and pistils in the same flower (synonymous with the old term hermaphrodite).
Monograph, a description (usually ample and elaborate) of a single thing; as of a genus, family or tribe, &c.

Monogynous, having but one pistil.
Monoicous, having the staminate and pistillate flowers distinct, but on the same plant.
Monoicously polygamous. having the perfect and imperfect flowers on the same plant.
Monopetalous, having but one petal; or rather the petals more or less united into one (*gamopetalous*, *DC.*).
Monophyllous, consisting of a single leaf.
Monosepalous, consisting of one sepal; —or rather the sepals more or less united into one (*gamosepalous*, *DC.*).
Mucronate, having a small point projecting from an obtuse end; usually the prolongation of the midrib, in leaves.
Multifid, many-cleft; cut into numerous segments.
Muricate, armed or covered with short spreading points, or acute excrescences.
Mutic, awnless; the opposite of awned, and mucronate.
Naked, destitute of the usual covering, or appendage;—as a stem without leaves, or scales,—leaves without pubescence,—a corolla without a calyx, or crown,—seeds without pericarp,—a receptacle without chaffy bracts, hairs, &c. a verticil of flowers without bracts, or leaves,—and an umbel without an involucre, &c.
Natural Order, Family or Tribe, an association of kindred genera; or of plants which are nearly related in their structure, and most important characters.
Nectariferous, bearing nectar or honey.
Nectary, that portion of a flower which produces honey; a term heretofore applied to any appendage of a flower which seemed to be supernumerary.
Nerved, having nerves, or coarse rib-like longitudinal fibres.
Nerves, rib-like fibres (in leaves, &c.) which extend from the base to, or towards, the apex.
Neutral flower, having neither stamen nor pistil.
Nodding, turning downwards; somewhat drooping.
Node, the knot, or solid and often tumid joint of a stem, or branch.
Nodose, having numerous nodes or joints.
Nuciform, nut-like; resembling a nut.
Nucleus, a central body; the kernel of a nut.
Nut, a seed inclosed in a hard shell.
Ob, a preposition which inverts the usual meaning of the word to which it is prefixed.
Obcompressed akenes, (in compound flowers) compressed, with the greatest diameter from right to left, or with the flat side to the front, or periphery.
Obconic, conic with the apex downwards.
Obcordate, heart-form, with the sinus at summit, and the narrowed point at the place of insertion.
Oblanceolate, inversely lanceolate,—or with the widest part above the middle, and tapering gradually to the base.
Oblique, a position between horrizontal and erect; also descriptive of the base of a leaf, &c. when it is unequal, or produced on one side.
Oblong, longer than wide, with parallel or nearly parallel sides.
Obovate, inversely ovate,—or with the broadest end above.
Obovoid, inversely ovoid.
Obsolete, indistinct, as if worn out.
Obtuse, blunt, or rounded.
Obversely, turned contrary to the usual position.
Ochrea (plural, *Ochreæ*), a membranous stipular sheath: as found in Polygonum, Cyperus, &c.
Ochroleucous, yellowish-white, or cream-colored.
Octandrous, having eight stamens.
Odd-pinnate leaf, having the leaflets in pairs, with a terminal odd one.
Opaque, not transparent.
Opercular, opening like a lid that is fixed by a hinge at one side.
Opposite, standing directly against each other, or at the same height, on opposite sides of the stem.
Orbicular, circular and flat, like a coin; the length and breadth equal and the circumference an even circular line; applied to leaves, or flatted bodies.—See *Terete*.
Orchideous, belonging to, or resembling plants of the Orchis tribe.
Order, the second division, or branch, in a systematic arrangement: a groupe of kindred natural objects.
Oval, longer than broad, with the two ends of equal breadth and curvature, and the sides curving from end to end.
Ovary, the embryo fruit, or base of the pistil, containnng the ovules, or rudiments of the future seeds.
Ovate, flat, with the outline of a longitudinal section of an egg;—as leaves, &c.
Ovate-lanceolate, lanceolate, inclining to ovate.
Ovate-oblong, oblong, with an ovate dilatation near the base,—or the ovate form lengthened out.
Ovoid, egg-shaped; terete, and swelling towards the base.—or with the outline of an entire egg; as fruits, &c.
Ovoid-oblong, the ovoid form lengthened out.
Ovules, the rudiments of seeds, contained in the ovary, or embryo fruit.
Palate, a prominence in the lower lip of a personate corolla.
Palea (plural, *Paleæ*), chaff; a term applied to the inner floral covering of the grasses (corolla of *Linn.*)
Paleaceous, chaffy; of a chaffy texture;—or furnished with chaffy scales.
Palmate, hand-shaped; deeply divided, with the segments nearly equal and spreading like fingers on the open hand.

Panduriform, fiddle-shaped; oblong with the sides contracted like a guitar, or violin.

Panicle, a loose irregular compound raceme,—or mode of flowering in which the peduncles are elongated, and variously and irregularly sub-divided;—as in oats, &c.

Paniculate, disposed in the form of a panicle.

Papilionaceous corolla, butterfly-shaped; when complete, consisting of 5 petals,—the upper one mostly larger than the others, called the *vexillum* or *banner*,—the two lateral ones the *ala* or *wings*,—the two lower ones usually cohering by their lower margins, and, from their form, called the *keel*.

Papillate, or *Papillose*, having the surface covered with fleshy dots, or points, like little teats.

Pappus, the crown of the fruit,—in Syngenesious and some other plants; usually hairy, or feathery, sometimes chaffy.

Parasitic, growing on, or drawing sustenance from, another plant; as Mistletoe, Dodder, &c.

Parietal placenta, attached to the wall, or enclosing shell, which circumscribes the cavity of a pericarp.

Parted, divided deeply, almost to the base.

Partial, a term applied to constituent parts of a compound whole.

Partition, see *Dissepiment*.

Pectinate, finely and regularly cleft, so as to resemble the teeth of a comb.

Pedate leaf, like a birds foot; divided to the petiole in narrow segments with the lateral ones diverging.

Pedicel, a partial peduncle; the ultimate division, next to the flower or fruit.

Pedicellate, having, or being supported on, a pedicel.

Peduncle, the common footstalk of the flower, or fruit.

Pedunculate, having a peduncle; not sessile.

Pellucid, transparent; pervious to light.

Pellucid-punctate, covered with punctures which permit the light to pass through.

Peltate, like a shield; having the footstalk affixed to the under surface, and not to the margin.

Pencil-form, resembling a painter's pencil, or brush.

Pendulous, hanging down.

Penicillate, tipped or tufted with hairs, like a pencil.

Penninerved, having the lateral nerves pinnately arranged.

Pentagonal, having five angles, or corners

Pentagynous, having five pistils.

Pentandrous, having five stamens.

Pentangular, five-angled.

Pentapetalous, having five petals.

Penultimate, the one next to the terminal one.

Pepo, a one-celled inferior indehiscent and mostly fleshy fruit, with the seed attached to parietal pulpy placentæ; as the Melon, &c.

Perennial, living more than two years.

Perfect flower, having both stamen and pistil, and producing fruit.

Perfoliate, having the stem pierced through the leaf.

Perianth, a term now applied to those equivocal floral envelopes which seem to consist of calyx and corolla soldered together,—or of calyx only.

Pericarp, the seedvessel, or fruit; the ovary arrived at maturity.

Perigynous, adhering to the inner surface of the calyx, and surrounding the pistils.

Persistent, not falling off; remaining beyond the time which seems fixed, or intended, for their fall.

Personate corolla, masked; having the throat closed by a prominent palate.

Petal, the delicate flower-leaf. In flowers of one petal (or united petals) the corolla and petal are the same; in flowers of more than one petal, the corolla is the whole, and the petals are the parts.

Petaloid, petal-like; delicate and colored or expanded, like a petal.

Petiolate, having, or supported on, a petiole; not sessile.

Petiole, the footstalk of a leaf.

Phænogamous, having visible stamens and pistils.

Pilose, hairy; having, or composed of, distinct straightish hairs.

Pinnæ, the leaflets of a pinnate leaf.

Pinnate, having distinct leaflets on opposite sides of a simple petiole.

Pinnatifid, cleft in a pinnate manner; but the segments united, or confluent at base.

Pinnatifidly, in a pinnatifid manner.

Pinnatisect, pinnately dissected or divided.

Pinnules, the leaflets on the subdivisions of a bipinnate leaf, or frond.

Pistil, the organ which occupies the centre of a fertile flower,—consisting usually, of *ovary*, *style*, *and stigma*: sometimes the *style* is wanting, or the *stigma* sessile.

Pistillate flowers, those flowers which have pistils, but not stamens.

Placenta (plural, *placentæ*), that part of a pericarp to which the seeds are attached.

Placental, pertaining, to the placenta.

Plane, flat.

Plano-convex, flat on one side and convex on the other.

Plicate, plaited; folded or crimped like a fan, or ruffle.

Plumose, feather-like. A *pappus* is plumose when each hair has other hairs arranged on opposite sides of it.

Pod, a long dry seedvessel, usually of 2 valves. The term is often applied indiscriminately to both Legumes and Siliques.

Pollen, the fertilizing powder contained in the anthers.

Pollinia, waxy masses of pollen; in Asclepias, and Gynandrous plants.

Polyadelphous, having the filaments united in 3 or more sets, or parcels.
Polyandrous, having more than ten hypogynous stamens.
Polygamous, having some flowers perfect, and others either staminate, pistillate, or neuter.
Polymorphous, variable; assuming many different forms.
Polypetalous, having many petals; sometimes applied to all flowers of more than one petal.
Polysepalous, having many sepals; or more than one.
Pome, an apple; a succulent or fleshy fruit, formed of several cartilaginous carpels which are inferior,—or growing to, and imbedded in, the thickened calyx.
Porous, full of holes, cells, or tubular openings.
Præmorse, end-bitten; ending blunt, as if bitten off.
Prickle, a sharp process arising from the bark, only,—and not originating in the wood.
Primary, first in a series, in order of time, or in importance; opposed to secondary.
Primordial, first in order; usually applied to the first leaves,—or those which are next above the cotyledons, or seminal leaves.
Prismatic, like a prism; having several angles, and intermediate flat faces.
Process, a protuberance, eminence, or projecting part.
Procumbent, lying on the ground, without putting forth roots.
Produced, extended, or lengthened out.
Proliferous, putting forth a young and unusual accessory growth, from the summit or centre of a branch, umbel, flower, &c.
Prostrate, lying flat, or close on the ground.
Pruinose, covered with a glaucous mealiness, like a plum.
Pseudo-pinnate, falsely or imperfectly pinnate; the leaflets confluent, or not articulated at base.
Puberulent, covered with a minute, or very short, fine, pubescence.
Pubescence, a general term for the hairy covering of plants.
Pubescent, having some sort of pubescence, or hairy covering.
Pulp, a soft fleshy or juicy mass.
Pulverulent, dusty; composed of, or covered with, a fine powder.
Punctate, appearing as if pricked full of small holes, or covered with indented points.
Puncticulate, having very minute punctures, or indented points.
Pungent, sharp-pointed, or prickly at apex; also acrid.
Pyramidal, tapering upwards; usually applied to 4-sided solids which diminish to the apex.
Pyriform, shaped like a pear; largest at the end.
Quadrangular, four-angled.
Quadrifarious, in 4 rows, or directions; facing or pointing 4 ways.
Quadrifid, four-cleft.
Quaternate, four together; arranged in fours.
Quinate, five together; arranged in fives.
Raceme, a mode of flowering in which the common peduncle is elongated, with the flowers on short lateral simple pedicels.
Racemose, having the flowers in racemes.
Rachis, the common peduncle, or elongated receptacle, on which florets are collected in a spike; also the midrib of a pinnatisect frond.
Radiate, having rays, or spreading ligulate florets, at the circumference.
Radiatiform, applied to heads of compound flowers in which all the florets are ligulate, and directed towards the circumference, like rays.
Radical, belonging to, or growing immediately from, the root.
Radicating, sending out roots, or striking root.
Radicle, a little root; the slender fibrous branch of a root.
Ramification, the branching or division of an organ into several parts.
Ramose, branching.
Rank, a row, or arrangement in a line.
Rays, the spreading ligulate florets round the margin of a compound flower; also, the footstalks, and marginal flowers, of an umbel.
Receptacle, the apex of the peduncle (often dilated), on which the parts of a flower are inserted.
Recurved, curved backwards.
Reflexed, bent or doubled backwards, so as nearly or quite to touch the part which supports it.
Regular, having similar parts equal among themselves; as the lobes of a corolla, &c.
Remote, seated or growing at an unusual distance.
Reniform, kidney-shaped; wider than long, very obtuse or rounded at apex, and cordate at base.
Repand, having the margin slightly indented with shallow sinuses,—as if cut out by segments of circles.
Replicate, folded back on itself.
Resupinate, turned up-side down.
Reticulate, netted; having veins or nerves crossing each other, or branching and reuniting, like net-work.
Retrorse, or *Retrorsely*, pointing backwards, or downwards.
Retuse, having a shallow sinus at the end.
Revolute, rolled backwards, or outwards.
Rhizoma, a root-stock;—or root-like subterraneous stem.
Rhomboid, rhomb-shaped; having 4 sides, with unequal angles.
Ribbed, having ribs, or parallel ridges.
Ribs, parallel ridges, or nerves.
Rigid, stiff, inflexible, or not pliable.
Ringent, gaping, or grinning, with an open throat.

Rostrate, beaked; having a process resembling the beak of a bird.
Rotate corolla, wheel-shaped; monopetalous and spreading almost flat, with little or no tube.
Rough, covered with dots, points, or short hairs, which are harsh to the touch.
Round, circular, or globose; not angular. See *Orbicular*, *Terete*, and *Globose*.
Rudiment, a term applied to an organ that is imperfectly developed.
Rufescent, becoming reddish-brown, or rust-colored.
Rufous reddish-brown, or rust-colored.
Rugose, wrinkled. *Rugulose*, finely wrinkled.
Runcinate, resembling the teeth of a saw; pinnatifid, with the segments acute and pointing backwards.
Runner, a slender shoot, producing roots and leaves at the end, only,—and from that place giving rise to another plant.
Saccate, having, or being in the form of, a sac, or pouch.
Sagittate, arrow-shaped; somewhat cordate, with the side-lobes (and frequently the sinus) acute.
Salver-form, tubular, with the limb abruptly and flatly expanded.
Samara, a winged or margined pericarp, not opening by valves;—as in Ash, Maple, &c.
Sarmentose, having, or sending forth, or being in the form of, runners.
Scabrous, rough with little points, or hairs.
Scales, small thin plates, or leaf-like processes.
Scandent, climbing,—mostly by means of tendrils.
Scape, a peduncle proceeding directly from the root, and mostly leafless.
Scarious, dry and skinny,—generally transparent.
Scattered, disposed or distributed without any regular order.
Scrobiculate, having the surface excavated into little pits, or hollows.
Scutellate, shaped like a buckler, or shallow dish.
Secund, one ranked; all turned to the same side.
Segment, the division or separated portion of a cleft leaf, calyx, &c.
Semi, half; as *semi-bivalved*, half two-valved. &c.
Sempervirent, always green; living thro' the winter, and retaining its verdure.
Sepal the leaflet, or distinct portion of a calyx,—when the latter consists of more than one piece.
Sepaloid, resembling sepals; green and not petal-like
Septiferous, bearing a septum.
Septum, the partition dividing the cells of fruit.
Sericeous, silky; covered with smooth glossy appressed silk-like hairs.
Series, a continued succession of things in the same order.
Serrate, sawed; having sharp teeth pointing towards the apex.
Serratures, the teeth, or segments, of a serrate margin.
Serrulate, finely serrate; having very small serratures.
Sessile, sitting close; without any footstalk.
Setaceous, or *Setiform*, bristle-like; resembling a bristle in size and figure.
Setæ, bristles.
Setose, bristly, having the surface covered with bristles. or stiff straight hairs.
Sheath, a membranous expansion, tubular, or folded and enclosing the stem.
Sheathed, inclosed or embraced by a sheath.
Sheathing, embracing the stem with a sheath.
Shining, glossy, bright.
Shrub, a small woody plant, branching near the ground.
Shrubby, small, and of a woody texture, like a shrub.
Silicle, a little or short silique; nearly as wide as long.
Silique, a long pod, or membranaceous seed vessel, of two valves,—having the seeds fixed alternately along both sutures.
Siliquose, having siliques,—or resembling a silique.
Simple, undivided; not branched.
Sinuate, having sinuses, or incisions which are open and rounded at bottom.
Sinuate-serrate, having serratures with the clefts, or incisions between them, rounded at bottom.
Sinus, an open rounded indentation, or incision.
Soboliferous, producing young plants from the root.
Solitary, standing alone; one only in a place.
Sori (plural of *Sorus*), small clusters of minute capsules on the back of the fronds of Ferns.
Spadix, a sort of dense-flowered succulent spike,—usually enveloped by, or proceeding from, a spathe.
Spathaceous, having a spathe.
Spathe, a sort of sheathing common calyx, or involucre, open on one side; often containing the spadix.
Spatulate, like a spatula; larger and rounded at the end, and gradually tapering to the base.
Species, the fourth or lowest permanent division of natural objects, in a systematic arrangement.
Specific, belonging to, or distinguishing, the species.
Sphacelate, dark-colored, as if gangrened, or dead.
Sphagnous, full of bog-moss, or sphagnum.
Spike, a mode of inflorescence in which the flowers are sessile on the sides of a long peduncle, or rachis.
Spikelet, a little spike,—or one of the subdivisions of a spike.
Spine, a thorn; a sharp process originating in the wood; in other words, an abortive branch.

Spinescent, becoming thorny; or inclining to be thorny.
Spinose, thorny; armed with thorns.
Spinulose, covered with small spines.
Sporules, those parts in Cryptogamous plants which answer to the seeds of other plants.
Spur, a tapering hollow production of a flower,—commonly called a nectary.
Spurred, having a spur, or spur-like elongations.
Squamose, scaly; covered more or less with scales.
Squarrose, ragged; having scales with the tips spreading, or divaricate.
Stamen, the organ of a flower which prepares the pollen,—usually standing next to the ovary within the corolla.
Staminate flower, having stamens, but not pistils.
Staminiferous, bearing or supporting the stamens.
Stellate, like a star; in the form of a star.
Stellular pubescence, compound or fasciculate hairs, with the branches spreading, like rays.
Stem, the general supporter of leaves flowers and fruit.
Stemless, having no apparent or usual stem.
Sterile, barren; producing no fruit.
Stigma, the summit of the pistil.
Stipe, a little pedicel, or footstalk, of seeds, &c. also the petiole of the frond, in Ferns.
Stipitate, having a little footstalk, or pedicel.
Stipular, furnished with stipules; or relating to stipules.
Stipules, leaflets, or leaf-like appendages, at the base of a petiole, or leaf.
Stoloniferous, having suckers, offsets, or running shoots (*stolones*), from the base of the stem or crown of the root.
Striæ, fine parallel ridges, or lines.
Striate, marked or scored with parallel lines, or minute ridges and grooves.
Strict, straight and rigidly upright.
Strigose, armed with small rigid bristles tapering from base to apex.
Style, that part of the pistil which is between the ovary and stigma,—sometimes wanting.
Sub—a preposition much employed as a diminutive,—equivalent to *almost*, *about*, or *approaching to*; as *sub*-sessile, for nearly sessile, &c.
Suberose, of a texture resembling cork.
Subulate, awl-shaped; linear or cylindric below, angular and tapering to a sharp point at summit.
Succulent, juicy; full of juice.
Sucker, a shoot from the root, or lower part of the stem.
Suffruticose, somewhat shrubby; shrubby at base.
Sulcate, furrowed, or grooved.
Super-axillary, situated or inserted above the axil.
Super-decompound, more than decompound; many times subdivided.
Superior, a term applied to the ovary when it is above the calyx, or free in the centre of the flower;—and also (though rather incorrectly), to the calyx, when the tube is adnate to the ovary, and the segments borne on its summit.
Suture, the line or seam formed by the junction of two margins,—as in the valves of seed-vessels, &c.
Syngenesious, having the anthers united,—as in the compound flowers.
Tenacious, adhesive, or holding on by little hooked points.
Tendril, a filiform twining appendage by which certain slender plants are enabled to climb, and sustain themselves.
Terete, round, like a column,—and either cylindric or tapering; applied to stems, or stem-like bodies. See *Orbicular*.
Terminal, proceding from, or situated at, the end or summit.
Ternary, arranged in threes; consisting of three.
Ternate, three-fold; three together,—as the leaflets of clover, &c.
Tessellated, resembling Mosaic work, or chequered like a chess-board.
Testa, the thin shell, or outer coating of a seed.
Tetradynamous, having 4 long and 2 short stamens, in a cruciate flower.
Tetragonous, four-cornered, or having 4 angles.
Tetrandrous, having 4 stamens of equal length.
Theca (singular, *Theca*), sheaths, or cases; the capsules of Cryptogamous plants.
Thorn, a sharp process from the woody part of a plant, formed of an abortive branch.
Throat, the orifice or passage into, the tube of a corolla.
Thyrsoid, resembling, or being in the form of, a Thyrsus.
Thyrsus, a kind of inflorescence, in which the flowers are crowded into a dense ovoid panicle.
Tomentose, covered with a curled or matted cottony pubescence.
Tomentum, a matted downy pubescence, or soft flocculent nap.
Toothed—See *Dentate*.
Torose, swelling out in ridges, or knobs.
Tortuous, winding, or bent in different directions.
Torulose, uneven, or swelling a little into ridges.
Translucent, clear, or transmitting light faintly.
Transverse, *Transversely*, across; crosswise, or in a cross direction.
Triadelphous, having the filaments united in three parcels.
Triandrous, having three stamens.
Triangular, having three angles, corners, or points.
Tribracteate, furnished with three bracts.
Trichotomous, three-forked; dividing by three equal branches.

Tricuspidate, having, or terminating in, three sharp points.
Trifarious, facing, or pointing, in three directions.
Trifid, three-cleft; partially divided into 3 segments.
Trifoliate, having 3 leaves; or the leaves arranged in threes.
Trigonous, three-cornered.
Trigynous, having 3 pistils.
Trilobate, three-lobed.
Tripartite, three-parted.
Tripinnate, thrice-pinnate; when a common petiole has bipinnate divisions on each side.
Tripinnatifid, pinnately dissected, with the primary divisions twice pinnatifid.
Triplinerved, having 3 principal nerves from the base.
Triquetrous, having 3 angles, or sides.
Triternate, when a petiole is biternate, and each branch bears ternate leaves.
Truncate, having the end square, or abrupt, as if cut off.
Tube, a pipe, or hollow cylinder.
Tuber, a solid fleshy knob,—usually attached to roots,
Tubercle, a small excrescence; or point on a surface, making it rough.
Tuberculate, covered with tubercles.
Tuberiferous, bearing or producing tubers
Tuberous, consisting of, or fleshy and solid like, tubers.
Tubular, having a tube, or shaped like a tube.
Tuft, a bunch, or fascicle, growing from the same root, or originating at the same point.
Tumid, swelled, or distended like a swelling.
Tunicate, coated; having concentric coats, or layers.
Turbinate, top-shaped; resembling an inverted cone.
Turgid, swelled, but not inflated.
Turion, the thick tender young shoot of a plant,–as of the Asparagus, Hop, &c.
Tussock, a dense tuft or bunch formed at the root; as in some species of Carex.
Twin, two of the same kind connected, or growing together.
Twining, winding round and ascending spirally.
Two-ranked (or *rowed*), see *Distichous*.
Umbel, a kind of inflorescence, in which the flowerstalks proceed from a common centre, like rays, or the braces of an umbrella.
Umbellate, in the form of an umbel.
Umbellet, a partial umbel; one of the subdivisions of a compound umbel.
Umbelliferous, bearing the flowers in umbels.
Umbilicate, having a central hollow, or depression.
Unarmed, without thorns, or prickles.
Uncinate, hook-shaped; hooked at the end.
Undulate, wavy; rising and falling like waves.
Unequal, the parts not corresponding in size, form, or duration.
Unguiculate, having a narrow base, like a claw.
Unilateral, growing, or inserted, all on one side of a stem, or peduncle.
Urceolate, Pitcher-shaped; swelling below, and contracted to a neck, above.
Utricle, a sac, or thin membranous pericarp, which does not adhere to the seed.
Valvate æstivation, when the sepals or petals are folded together and fit by their edges without overlapping.
Valves, the several parts of a seed-vessel. —especially of a capsule; also, the chaffy pieces, which cover the flower of the grasses; and the scales which close the tube, in some corollas.
Valviform, resembling, or having the form of, valves.
Variety, a plant changed by some accidental causes,—as soil, culture, climate, &c., but not permanently or specifically distinct.
Vaulted, arched over, like the roof of the mouth.
Veined, having the vessels variously branching over the surface.
Ventricose, swelling out in the middle, or below.
Vernation, the mode in which young leaves are folded and packed in a bud.
Verrucose, warty; covered with wart-like, excrescences.
Vertical, *Vertically*, in a perpendicular direction; from the apex directly towards the base.
Verticil, a whorl; flowers, or leaves, surrounding the stem in a ring.
Verticillate, growing or arranged in a verticil.
Vesicles, little bladder-like vessels.
Vesicular, *Vesiculose*, made of, or resembling, little bladders.
Vexillum, the banner, or broad upper petal, of a papilionaceous corolla.
Villose, or *Villous*, clothed with numerous long soft hairs.
Villus, the pubescence on a villose plant.
Virescent, inclining to or becoming green.
Virgate, wand-like; long slender and straight.
Viscid, clammy; covered with an adhesive moisture.
Vittæ (singular, *Vitta*), fillets; or linear receptacles of oily matter on the carpels of umbelliferous plants.
Viviparous, producing a collateral offspring by means of bulbs,—or having the seeds to germinate before they are detached from the plant.
Volubile, ascending spirally. See *Twining*.
Wavy, See *Undulate*.
Whorl, See *Verticil*.
Winged, having the sides extended into a leaf-like expansion.
Wings. the two sided-petals of a papilionaceous corolla; also, the membranous expansion on the margin of some pericarps; and on the sides of some petioles.
Woolly, clothed with a pubescence resembling wool,

FLORA CESTRICA.

Virtud es, respondió Sancho, conocer esas Yerbas, que segun yo me voy imaginando, algun dia será menester usar de ese conocimiento. *Cervantes.*

CLASS I. MONANDRIA.

Order 1. Monogynia.

[Cyperus inflexus. Eriophorum virginicum. *Triandria Monogynia.*]

Order 2. Digynia.

1. CALLITRICHE. *L. Nutt. Gen.* 5.

[Greek, *kallos*, beauty, and *thrix*, hair; in allusion to the hair-like stems, or leaves.]

Monoicously polygamous: *Bracts* 2, opposite, incurved, fistular colored. *Calyx* 0. *Corolla* 0. Staminate Fl. *Stamen* 1, (rarely 2,) exserted. Pistillate Fl. *Ovary* 4-lobed. *Capsule* compressed 4-celled, indehiscent; each cell 1-seeded.

Herbaceous, glabrous aquatics: leaves opposite, simple, entire; flowers axillary, minute. *Nat. Ord.* 164. *Lindl.* Callitrichineæ.

1. C. verna, *L.* var. *intermedia, Torr.* Upper leaves spatulate-obovate, obscurely 3-nerved; lower ones linear, 1-nerved, obtuse or emarginate; fruit sessile, lobes obtusely margined. *Beck, Bot. p.* 123.

C. verna. *Mx. Am.* 1. *p.* 2. *Nutt. Gen.* 1. *p.* 3.

C. intermedia. *Willd. Sp.* 1. *p.* 29. *Pers. Syn.* 1. *p.* 6. *Muhl. Catal. p.* 1.

C. heterophylla. *Pursh, Am.* 1. *p.* 3. *Bart. Phil.* 1. *p.* 2. *Ell. Sk.* 1. *p.* 4. *Florul. Cestr. p.* 1.

C. aquatica. *Bigel. Bost. p.* 2.

Vernal Callitriche. *Vulgò*—Water Chick-weed. Water Starwort.

Root annual, fibrous. *Stem* somewhat compressed, bifistular, one to two feet long, (varying with the depth of water,) branching from the axils of the leaves, and throwing out from the joints, at right angles with the leaves, one or more white, filiform *radicles*, 1 to 4 inches long. *Leaves* sessile, semi-amplexicaul, punctate; the uppermost ones crowded into a stellated tuft, and floating on the surface of the water, the submersed ones narrower, the lower ones quite linear. *Flowers* monoicous; staminate and pistillate flowers sometimes solitary, more commonly associated and closely approximated, in the axils of the leaves,—the staminate flower being next the stem, the pistillate exterior, or next the leaf,—and each furnished at base with a pair of opposite bracts. *Bracts* (*calyx*, of authors,) incurved or somewhat lunate, hollow, membranaceous and white; those in front, or belonging to the pistillate flower, much smaller. *Stamen* rather conspicuous; *filament* one fourth of an inch long; *anther* didymous, somewhat 4-lobed, orange-yellow. *Ovary* tetragonous, 4-lobed; *styles* 2, filiform, pellucid, nearly as long as the stamen, *Fruit* compressed, bisulcate, emarginate or somewhat obcordate, each flatted half or division, consisting of two concrete carpels, margined on the back so as to form a groove between them. *Seeds* peltate. *Lindl.* (oblong. *Torr.*)

Hab. Pools and sluggish rivulets: frequent. *Fl.* April—Sept. *Fr.* July—Oct.

Obs. Common throughout the United States,—and perhaps, the only species of the genus, amongst us; for there is strong reason to suspect, that the C. *autumnalis*, *L.* (C. linearis, *Pursh.*) and the C. *terrestris*, *Raf.* (C. brevifolia, *Pursh.*) are nothing more than *Varieties* of this remarkably polymorphous plant.

The *Var. autumnalis*—with leaves nearly *all* linear, and often bifid at the end,—is usually found in shallow waters, and along the muddy margins of rivulets, in company with the *Var.* intermedia.

The *Var. terrestris*—with short, obtuse, crowded and somewhat succulent leaves—occurs in soft muddy places which are not covered with water; and the stem is consequently prostrate, and creeping. It seems, in fact, to be a mere *stunted* variety, resulting from its locality; and in this opinion several eminent Botanists concur,—of whom I may mention Professors HOOKER and TORREY; and my friend Dr. PICKERING, of Philadelphia.

The associated flowers in the axils have generally been considered as constituting *one perfect flower* in each; but the arrangement of the parts seems pretty clearly to indicate *two, distinct*, unisexual flowers, closely crowded together.

[Leersia virginica. Cinna arundinacea. Andropogon macrourus, and A. virginicus. *Triandria Digynia.*]

CLASS II. DIANDRIA.

Order 1. Monogynia.

§ 1. FLOWERS COMPLETE. A. *Ovary superior.*

Corolla monopetalous: † *regular.* * *Fruit a Berry.*

2. LIGUSTRUM. *L.* *Gen. Pl.* 23.

[Latin, *Ligare*, to tie; from the use made of its pliable branches.]

Calyx minutely 4-toothed. *Corolla* 4-lobed; lobes ovate, spreading. *Berry* 2-celled; cells 2-seeded.

Shrubs: leaves opposite, simple; flowers in terminal panicles. *Nat. Ord.* 205. *Lindl.* OLEACEÆ.

1. L. VULGARE, *L.* Leaves elliptic-lanceolate, entire, acute or obtuse, mucronulate, glabrous; panicle racemose, crowded. *Beck*, *Bot. p.* 231. COMMON LIGUSTRUM. *Vulgò*—Privet. Prim.
Gallicè—Troêne. *Germanicè*—Der Hartriegel. *Hispanicè*—Alheña.

Stem 6 to 8 or 10 feet high, much branched, branches opposite. *Leaves* varying from lanceolate and acute, to elliptic, or oblanceolate and obtuse. *Calyx* small, monosepalous, with four minute, almost obsolete teeth. *Corolla* white, funnel-form, the tube longer than the calyx. *Berry* black, globose.

Hab. Along fences, and road sides: frequent. *Fl.* June. *Fr.* October.

Obs. This shrub was introduced from England, by the early settlers of Chester County, and cultivated for *hedges*; but it did not answer the purpose well, and was soon neglected. It is now extensively naturalized. The leaves,—which are hardy, and often persist until mid-winter,—are considerably stimulant; and are frequently chewed, or used in gargles, as a popular remedy for ulcers in the mouth and throat. There is a variety with *white berries*, occasionally cultivated by the curious.

* * *Fruit a Drupe, or Nut.*

3. CHIONANTHUS. *L. Nutt. Gen.* 9.

[Greek, *Chion*, snow, and *Anthos*, a flower; from its snow-white flowers.]

Calyx 4-parted. *Corolla* deeply 4-parted; lobes long and linear. *Drupe* 1-seeded. *Nut* striated.

Small Trees: leaves simple, nearly opposite; flowers in trichotomous pendulous panicles, terminal or axillary. *Nat. Ord.* 205. *Lindl.* OLEACEÆ.

1. C. VIRGINICA, *L.* var. *montana*, *Pursh.* Leaves oval-lanceolate, acute, entire, subcoriaceous, smooth; peduncles 3-flowered. *Beck, Bot. p.* 232.

C. virginica. *Marsh. Arbust. p.* 33. *Mx. Am.* 1. *p.* 3. *Pers. Syn.* 1. *p.* 9. *Muhl. Catal. p.* 2. *Nutt. Gen.* 1. *p.* 5. *Ell. Sk.* 1. *p.* 6. *Florul. Cestr. p.* 2. *Lindl. Ency. p.* 12.

C. virginica, *var.* latifolia. *Ait. Kew.* 1. *p.* 23. *Willd. Sp.* 1. *p.* 46.

VIRGINIAN CHIONANTHUS. *Vulgò*—Fringe Tree. Snowdrop Tree.

Stem 10 to 20 feet high, with branches mostly opposite. *Leaves* 4 to 6 inches long, and 2 to 3 inches wide, acute at each end, glabrous above, somewhat hairy on the nerves and veins beneath. *Panicles* slender, with the terminal pedicels by threes. *Calyx* small. *Corolla* white, with a very short tube, and four (sometimes 5, or 6, *Pers.*) long narrow lobes;—or rather, 4 petals united at base. *Stamens* short (often 3, or 4.) *Drupe* of a livid blackish color when ripe. *Marsh.*

Hab. West Brandywine: near Worth's Mill: rare. *Fl.* June. *Fr.*

Obs. This ornamental little tree is not common in Chester County. I have only found it native in the above locality: But it may probably be met with in other districts. There is another *variety* in the United States, [var. *maritima*, *Pursh.*] which *Lindley* considers a distinct species.

†† *Corolla irregular*: *Fruit a Capsule.*

4. VERONICA. *L. Nutt. Gen.* 11.

[A name of obscure and doubtful etymology.]

Calyx 4-parted. *Corolla* subrotate, unequally 4-lobed, the lower lobe narrower. *Capsule* obcordate, compressed at the apex, 2-celled. *Seeds* numerous.

Mostly herbaceous: leaves generally opposite, rarely entire. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

* *Flowers in a terminal Raceme.*

1. V. SERPYLLIFOLIA, *L.* Stem ascending; leaves ovate, slightly crenate, smooth; raceme elongated; capsule broadly obcordate. *Beck, Bot. p.* 261.

THYME-LEAVED VERONICA. *Vulgò*—Paul's Betony.

Root perennial. *Stem* procumbent at base and radicating, 4 to 8 inches long, roughish. *Leaves* nearly sessile, sometimes oval or roundish ovate, subcarnose. *Raceme* erect; flowers pedicellate, solitary, in the axils of elliptic bract-like leaves. *Corolla* pale blue, (sometimes nearly white,) with deepor blue stripes. *Capsule* ciliate.

Hab. Moist meadows, and low grassy grounds; common. *Fl.* May. *Fr.* June.

Obs. Supposed to be introduced: if so, it is completely naturalized.

* * *Flowers in lateral, or axillary Racemes.*

2. V. OFFICINALIS, *L.* Stem procumbent, roughly pubescent; leaves ovate and obovate, serrate, hairy; racemes pedunculate, erect. *Beck, Bot. p.* 262.

OFFICINAL VERONICA. *Vulgò*—Common, or Male Speedwell. *Gallicè*—Thé d'Europe. *Germanicè*—Acchter Ehrenpreis.

Whole plant covered with short roughish pubescence. *Root* perennial. *Stem* 6 to 12 inches long, diffuse with ascending branches. *Leaves* on short petioles, varying from ovate to oval and obovate, pale green. *Racemes* on long axillary footstalks; *bracts* small, lanceolate; flowers nearly sessile; *corolla* pale blue, with darker veins. *Capsule* pubescent, yellowish.

Hab. Dry banks; woodlands, &c. common. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. This species also is believed to be introduced; but it is now very common. It once had a place in the Materia Medica, as a tonic, &c. though it is probably not worthy of the distinction.

3. V. BECCABUNGA, *L.* Stem procumbent at base, and radicating at the joints; leaves lance-ovate, rather acute, serrate, on short petioles, glabrous. *Beck, Bot. p.* 262.

V. intermedia. *Schw. in Sill. Journ.* 8. *p.* 268.

Vulgò—Brooklime. Wall-ink.

Whole plant glabrous. *Root* perennial. *Stem* 9 to 15 inches high. *Leaves* often sub-cordate at base, decurrent on the petiole, generally acute,—lowest ones obtuse. *Racemes* opposite, erect, long and slender; *bracts* lanceolate, shorter than the pedicels. *Corolla* bright blue. *Capsule* ovoid, or somewhat inflated.

Hab. Muddy Springs, and rivulets; frequent. *Fl.* June. *Fr.* August.

Obs. This plant is somewhat variant from the European species of the same name,—the leaves being generally acute, more lanceolate, and more distinctly serrate. The late Mr. *Schweinitz* considered it a distinct species, and named it V. *intermedia*, in a list of Plants of Easton, Penn. published in Silliman's Journal, Vol. 3. p. 268. In his Herbarium, at the Philadelphia Academy, it is labelled V. *americana*. It is, however, closely allied to the V. Beccabunga of Europe.—The plant has been reputed to possess anti-scorbutic properties; and the oxpressed juice is a popular remedy for croup, or cynanche trachealis: But its efficacy is very doubtful.

4. V. ANAGALLIS, *L.* Stem erect; leaves amplexicaul, lanceolate, acute, denticulate; racemes opposite. *Beck, Bot. p.* 261.

Vulgò—Water Speedwell. Long-leaved Brooklime.

Root perennial; with verticils of numerous long capillary radicles at the lower nodes of the stem. *Stem* 12 to 18 inches high, rather coarse and fleshy, sometimes with a roughish pubescence. *Leaves* smooth, closely sessile and embracing the stem, narrow-lanceolate, 2 to 3 inches long, and tapering gradually to a point, sparingly denticulate, often nearly entire. *Racemes* mostly opposite, on stout succulent peduncles; *bracts* linear-lanceolate, as long as the pedicels. *Corolla* pale blue, with purple stripes. *Capsule* tumid.

Hab. Muddy margins of rivulets: Great Valley; rare. *Fl.* June. *Fr.* August.

Obs. This is undoubtedly the true V. Anagallis; as I have verified it by comparison with authentic European specimens. When my Catalogue was published, I had never seen the plant; and mistook for it, a variety of V. Beccabunga,—which, however, is quite distinct. This species occurs at Downingtown, and Brooke's Mill; where it was detected, in 1833, by my indefatigable friend, Mr JOSHUA HOOPES. I have also received Kentucky specimens, from Professor SHORT.

5. V. SCUTELLATA, *L.* Stem slender, somewhat erect; leaves sessile, lance-linear, acute, denticulate; racemes mostly alternate; pedicels divaricate. *Beck, Bot. p.* 261.
SHIELD-LIKE VERONICA. *Vulgò*—Scull-cap Speedwell.

Glabrous. *Root* perennial, creeping. *Stem* weak, often branched and diffuse, glabrous, 8 to 15 inches long. *Leaves* semiamplexicaul, narrow, 1 1-2 to 3 inches long, remotely denticulate, sometimes nearly entire. *Racemes* mostly simple, long, flaccid; pedicels filiform; *bracts* minute, lanceolate. *Corolla* purplish blue, or flesh-colored, lobes roundish-ovate. *Capsule* broad, suborbicular, much compressed.

Hab. Low, swampy grounds: 3 miles N. of West-Chester: rare. *Fl.* June. *Fr.* July.

Obs. This species is supposed by some to be introduced; but it certainly occurs in very retired spots, with every appearance of being native. First detected in 1829, by DAVID TOWNSEND, Esq.

* * * *Flowers solitary, axillary.*

6. V. PEREGRINA, *L.* Stem erect; leaves oblong, dentate-serrate, rather obtuse; flowers sessile. *Beck, Bot. p.* 262.
Also V. marilandica. *Willd. Sp.* 1. *p.* 76.
FOREIGN VERONICA. *Vulgò*—Purslane-leaved Speedwell. Neckweed.

Whole plant glabrous. *Root* annual. *Stem* often branched at base, 4 to 8 inches high. *Leaves* fleshy; radical ones petiolate, ovate; those of the stem sessile, sparingly dentate; upper ones narrower, entire. *Calyx*-lobes resembling the small upper leaves, or bracts. *Corolla* white, small and fugacious, with the lobes nearly equal.
Hab. Gardens, and other cultivated grounds: common. *Fl.* May. *Fr.* June.

Obs. This species,—which probably has also been introduced,—had the reputation, some years ago, of being useful as a medicine in scrophulous affections; and hence the name "Neck-weed." See *Barton's Med. & Phys. Journal, Vol.* 3. *part* 1. *p.* 24. Its alleged virtues, however, seem to require confirmation.

7. V. ARVENSIS, *L.* Stem erect or assurgent, pilose; lower leaves on short petioles, cordate-ovate, incised-crenate; upper leaves alternate, sessile, lanceolate, nearly entire; flowers subsessile. *Beck, Bot. p.* 262.
V. agrestis. *Florul. Cestr. p.* 2.
FIELD VERONICA. *Vulgò*—Corn Speedwell.

Whole plant pilose. *Root* annual. *Stem* mostly erect, 2 to 8 inches high, often branched at base; branches assurgent. *Flowers* on short peduncles. *Calyx*-lobes unequal. *Corolla* pale blue, shorter than the calyx. *Capsule* much compressed, ciliate.
Hab. Dry banks, fields, and exsiccated swamps; frequent. *Fl.* May. *Fr.* June.

Obs. This is the plant which I was prevailed on to call "*V. agrestis,*" in my Catalogue,—though I then suspected it to be the *arvensis*; and am now satisfied of the fact. It is doubtless a naturalized foreigner.

8. V. HEDERIFOLIA, *L.* Stem procumbent; leaves petiolate, roundish-ovate, somewhat 5-lobed; flowers pedunculate; lobes of the calyx cordate-ovate, acute, ciliate. *Beck, Bot. p.* 262.
IVY-LEAVED VERONICA.

Root annual. *Stem* 5 to 10 inches long, diffuse, pilose, the pubescence somewhat in lines. *Radical* or *primordial leaves* persistent, opposite, oval, on long petioles,

smooth; *stem-leaves* pilose; lower ones often opposite, broad or round-ovate, mostly 5-lobed, middle lobe largest; upper ones alternate, 3-lobed. *Peduncles* longer than the leaves. *Corolla* blue, shorter than the calyx. *Capsule* ventricose.

Hab. Along Ridley Creek, near J. Garrett's: rare. *Fl.* April. *Fr.* May.

Obs. Probably introduced from Europe. This species was found, and brought to me in 1831, by Mr. Geo. W. Hall,—a gentleman to whose Botanical zeal, and unwearied industry in exploring the eastern portion of the County, I am indebted for a considerable number of the plants which have been detected since the publication of my Catalogue.

Two or three other species, of this numerous genus, have been found in the United States; one of which *Pursh* describes as a native.

5. LEPTANDRA. *Nutt. Gen.* 12.

[Greek, *Leptos*, slender, and *Aner*, *andros* male; in reference to the stamens.]

Calyx 5-parted; lobes acuminate. *Corolla* tubular-campanulate, unequally 4-lobed, somewhat ringent. *Stamens*, and finally the *pistil*, much exserted. *Capsule* ovoid, 2-celled, many-seeded.

Herbaceous: leaves verticillate; flowers in long, dense, subterminal spikes. *Nat. Ord.* 211. *Lindl.* Scrophularineæ.

1. L. virginica, *Nutt.* Stem erect; leaves verticillate, mostly in fours or fives, lanceolate, serrate, on short petioles; spikes aggregated. *Beck, Bot. p.* 263.

Veronica virginica. *L. Willd. Sp.* 1. *p.* 54. *Mx. Am.* 1. *p.* 5. *Pers. Syn.* 1. *p.* 10. *Ait. Kew.* 1. *p.* 26. *Muhl. Catal. p.* 2. *Pursh, Am.* 1. *p.* 10. *Ell. Sk.* 1. *p.* 10. *Lindl. Ency. p.* 14.

Virginian Leptandra. *Vulgò*—Tall Speedwell.

Root perennial. *Stem* simple, obtusely angular, smooth, 2 to 5 feet high. *Leaves* in verticils—generally 4 or 5, occasionally 6, sometimes only 3,—subsessile, tapering to a sharp point, acutely serrate, glaucous beneath, and hairy along the nerves. *Flowers* subsessile, in long terminal, subterminal and verticillate, spikes. *Bracts* small, acuminate. *Corolla* white, tubular, pubescent within. *Capsule* oblong-ovoid, 2-celled; valves inflected, forming the dissepiment,—(each valve apparently composed of *two*, united by a suture,—) opening at summit into four teeth, or segments.

Hab. Rich low-lands, and borders of woods: frequent. *Fl.* July. *Fr.* September.

Obs. The only species of the genus, known in the U. States. It formerly belonged to *Veronica*; but its striking difference long ago induced *Colden*, and afterwards *Rafinesque*, to propose it as the type of a distinct genus. It was separated by *Nuttall*, in 1818.

6. UTRICULARIA. *L. Nutt. Gen.* 19.

[Lat. *Utriculus*, a little bottle; from the inflated appendages to the floating roots.]

Calyx 2-parted; lips undivided, nearly equal. *Corolla* personate, or irregularly bilabiate; upper lip erect, lower one spurred at base; palate subcordate. *Filaments* incurved, bearing the *anthers* within the apex. *Style* short; *stigma* bilamellate. *Capsule* globose, 1-celled, many seeded.

Herbaceous plants, living in water or marshes: the floating species with roots resembling leaves, often much divided, and bearing little vesicles. *Nat. Ord.* 208. *Lindl.* Lentibulariæ.

1. U. MACRORHIZA, *Le Conte.* Leafless; floating; root long, somewhat repent, dichotomously branching, vesiculose; scape many-flowered. *Le Conte, Ann. Lyc. N. Y.* 1. *p.* 73.
U. vulgaris. *Pursh, Am.* 1. *p.* 15. *Muhl. Catal. p.* 3. *Bart. Phil.* 1. *p.* 10. *Bigel. Bost. p.* 7. *Torr. Fl.* 1. *p.* 18. *Florul. Cestr. p.* 3. *Torr. Comp. p.* 20. *Beck, Bot. p.* 287. Not of *L. Willd. Pers. Ait.* nor *Lindl.*
LARGE-ROOTED UTRICULARIA. *Vulgò*—Bladderwort. Hooded Milfoil.

Perennial. Growing in the water. *Root* (or radical appendages,) submersed, slightly attached to the mud at bottom, long, branching, decompound, resembling finely dissected aquatic leaves; segments, or radicles, capillaceous, flat, setaceously toothed on the margin,—the first ones naked, the rest furnished with vesicles,—the terminal ones (when first developed or growing?) densely clustered together, broader, and fringed with little fascicles of bristle-like ciliæ. *Scape* assurgent, 5 to 10 inches long. *Flowers*, 4 to 6 or 8, in a raceme; *peduncles* about three-fourths of an inch long, with each a membranaceous *bract* at base. *Corolla* yellow, with brown stripes on the palate.

Hab. Stagnant pools: Brandywine: not common. *Fl.* June. *Fr.*

Obs. Mr. *Le Conte* considers those multifid appendages at the base of the scape, which have heretofore been called *leaves*, as genuine roots; and avers, moreover, that our plant is decidedly distinct from the U. *vulgaris* of Europe,—with which it was long confounded. There are 9 or 10 additional species in the U. States; but this is the only one which has yet been found in Chester County.

B. *Ovary inferior: Corolla dipetalous.*

7. CIRCÆA. *L. Nutt. Gen.* 27.

[Poetically named after the fabled Enchantress, *Circe.*]

Calyx 2-parted. *Petals* 2, obcordate. *Stamens* alternating with the petals. *Capsule* obovate, hispid with uncinate hairs 2-celled, not opening; cells each 1-seeded.

Herbaceous: leaves opposite; flowers in terminal and lateral racemes; fruit uncinately hispid. *Nat. Ord.* 49. *Lindl.* CIRCÆACEÆ.

1. C. LUTETIANA, var. *canadensis, L.* Stem erect, glabrous; leaves petiolate, ovate, acute, remotely toothed, nearly smooth. *Beck, Bot. p.* 120.
C. Lutetiana. *Pers. Syn.* 1. *p.* 10. *Bigel. Bost. p.* 11.
C. canadensis. *Muhl. Catal. p.* 2. *Florul. Cestr. p.* 5.
PARISIAN CIRCÆA. *Vulgò*—Enchanter's Night-shade.

Root perennial. *Stem* simple, 12 to 18 inches high. *Leaves* often cordate at base, acuminate, remotely and somewhat repand-denticulate, finely ciliate. *Flowers* in virgate racemes, alternate and pedicellate. *Calyx* superior; lobes contracted into a little tube at base. *Corolla* reddish white; *petals* alternate with the lobes of the calyx. *Style* longer than the stamens; *stigma* emarginate. Pedicels of the *fruit* reflexed.

Hab. Moist, rich woodlands: common. *Fl.* July. *Fr.* August.

Obs. Our plant varies somewhat from the C. *Lutetiana*, of Europe. There is one other species found in the United States.

§ 2. Flowers incomplete.

8. FRAXINUS. *L. Natt. Gen.* 781.

[The Latin name of the Ash Tree: Etymology obscure.]

Dioicously polygamous: Staminate Fl. (rarely *perfect.*) *Calyx* 0, or minute and 3 or 4-parted. *Corolla* 0, or 4 petalled. Pistillate *Fl. Calyx* and *Corolla* as in the Staminate flower. *Ovary* superior, ovate, compressed *Capsule* (or *Samara*) compressed, 2-celled, by abortion 1-seeded, terminating in a membranous wing.

Trees: leaves opposite, odd-pinnate; flowers mostly dioicous, paniculate,—the staminate ones in dense clusters. *Nat. Ord.* 205. *Lindl.* Oleaceæ.

* *Flowers naked.*

1. F. Sambucifolia, *Willd.* Leaflets sessile, ovate-lanceolate, serrate, the lateral ones somewhat rounded and unequal at base. *Beck. Bot. p.* 232. Icon, *Mx. f. Sylva.* 3. *tab.* 122.

F. nigra. *Marsh. Arbust.* p. 51.

Sambucus-leaved Fraxinus. *Vulgò*—Black Ash. Water Ash.

Stem 30 to 40 feet high; young branches glabrous, green, sprinkled with black elliptic dots, or warts. *Leaflets* usually in 7's or 9's, acuminate, rugose and shining above, with a villous tuft at base, and in the axils of the nerves beneath. *Samara* broadish, of nearly uniform width.

Hab. Low grounds: banks of rivulets: frequent. *Fl.* April. *Fr.*

Obs. The flowers of our species of Fraxinus are all dioicous and apetalous. This one is neither so large nor so valuable as the following.

* * *Flowers calyculate.*

2. F. acuminata, *Lam.* Leaflets petiolate, elliptic or oblong-ovate, acuminate, slightly dentate, glaucous beneath; young branches glabrous. *Beck, Bot. p.* 232.

F. alba. *Marsh. Arbust. p.* 51.

F. americana. *Willd. Sp.* 4. *p.* 1102. *Pers. Syn.* 2 *p.* 604. *Bart. Phil.* 2. *p.* 192. *Mx. f. Sylva.* 3. *p.* 59. Icon, *tab.* 118. *Bigel. Bost. p.* 380. *Florul. Cestr. p.* 5. Not of *Marsh.*

F. diseolor, *var.* americana. *Muhl. Catal. p.* 96.

Acuminate Fraxinus. *Vulgò*—White Ash.

Stem 40 to 50 feet high; young branches glabrous, with white dots. *Leaflets* at first downy, finally smooth and green above, pubescent and glaucous beneath. *Flowers* with a minute 3 or 4-toothed calyx. *Samara* terete at base, with a narrowish lanceolate wing.

Hab. Borders of woods, and low meadow grounds: common. *Fl.* May. *Fr.*

Obs. Lindl. Ency. gives F. acuminata, *Lam.* and F. americana, *Willd.* as *distinct* plants. The timber of this species is highly valuable, and much used by wheelrights, coach-makers, &c.

3. F. pubescens, *Walt.* Leaflets on short petioles, elliptic-lanceolate, subserrate, acuminate; petioles and young branches tomentose. *Beck, Bot. p.* 232.

F. Pennsylvanica. *Marsh. Arbust. p.* 51.

F. tomentosa. *Mx. f. Syl.* 3. *p.* 63. Icon, *tab.* 119. *Bart. Phil.* 2. *p.* 192.

Pubescent Fraxinus.

Stem 30 to 40 feet high; young branches and petioles covered with a velvety pubescence. *Leaflets* lanceolate, narrower than the preceding, on shorter petioles, and more pubescent beneath. *Samara* terets and tapering below, almost acute at base, with a long narrow linear-lanceolate wing.

Hab. Low grounds; Brandywine, &c. common. *Fl.* May. *Fr.*

Obs. This is generally a smaller tree than the preceding; but is scarcely distinguished from it by careless observers,—being commonly called by the same name, and used for the same purposes. I entirely overlooked it, when my Catalogue was prepared.

9. LEMNA. *L.* *Nutt. Gen.* 28.

[Greek, *Lemma*, bark, husk, or scale; from the form of the fronds.]

SUB-MONOICOUS: *Calyx* monosepalous, membranaceous, urceolate. *Corolla* 0. *Stamens* 2 (rarely wanting), collateral. *Ovary* roundish, flat above, keeled beneath; *style* as long as the ovary: *stigma* flat. *Fruit* a *utricle*; *seed* 1, oval, lying horizontally, fixed by its lower surface. *Hooker.*

Minute herbaceous, floating plants; forming a series of lenticular fronds, with one or more roots from the centre, beneath,—and producing flowers, and young fronds, from their cleft margins. *Nat. Ord.* 260. *Lindl.* PISTIACEÆ.

1. L. TRISULCA, *L.* Fronds thin, elliptic-lanceolate, caudate at base, serrate at apex; root solitary. *Beck*, *Bot. p.* 383.

THREE-FURROW, OR THREE-LOBED LEMNA.

Root a single fibre, terminated at the extremity by a sheath-like appendage, resembling the calyptra of mosses. *Fronds* one-third to three-fourths of an inch long, membranaceous, nearly pellucid, attenuated at base into a slender tail or petiole,—obtuse at apex, and erose or somewhat serrate; producing flowers, or a young frond, on each side, from a longitudinal cleft in the margin, near the middle. While these lateral fronds remain sessile, they present the appearance of a three lobed leaf.

Hab. Stagnant waters: New Garden township: rare. *Fl.* *Fr.*

Obs. All the species are believed to be *annual*. This one was found by Mr. JOSHUA HOOPES, September, 1833, near Phillip's Lime quarries, New Garden.

2. L. MINOR, *L.* Fronds nearly oval, sessile; root solitary. *Beck*, *Bot. p.* 383.

LESSER LEMNA. *Vulgò*—Duck's Meat. Duckweed.

Root a solitary fibre. *Fronds* minute, about a line, or a line and a half long, roundish ovate or oval, somewhat succulent, sessile, with a cleft in the margins near the base, producing flowers and young fronds.

Hab. Ponds of still water: common. *Fl.* *Fr.*

Obs. This species is often very abundant in stagnant waters, so as to furnish a verdant covering to large portions of their surface. It is said that Ducks feed on it: hence its common name.

3. L. POLYRHIZA, *L.* Fronds roundish-obovate; roots numerous, fascicled. *Beck*, *Bot. p.* 383.

MANY-ROOTED LEMNA.

Root a fascicle of fibres from near the centre of the frond. *Fronds* from 2 to 4 lines long, sessile, of a firmer texture than either of the preceding, distinctly nerved above, and often dark purple beneath.

Hab. Stagnant pools: Black rock, Schuylkill: not common. *Fl.* *Fr.*

Obs. Found in August, 1830, by my friend DAVID TOWNSEND, Esqr. to whose extraordinary zeal, and Botanical acumen, I am indebted for the detection and determination of many of our rare and difficult plants. Two or three other species are enumerated in the United States. I have not had an opportunity to examine the fructification of our species of Lemna; and have, consequently, been obliged to give that portion of the description upon the authority of others. The figures and description by Prof. HOOKER, in the *Flora Londinensis*, appear to be complete and ample.

☞ *Sub-Diandrous, Labiate Flowers; with Seeds apparently naked.*

[Lycopus. Cunila. Hedeoma. Monarda. Salvia, and Collinsonia. *Didynamia Gymnospermia.*]

☞ *Sub-Diandrous, Irregular Flowers; with Capsular Fruit.*

[Gratiola. Lindernia, and Catalpa. *Didynamia Angiospermia.*]

[Lepidium virginicum. *Tetradynamia Siliculosa.*]

Order 2. Digynia.

10. PODOSTEMUM. *Mx. Nutt. Gen.* 729.

[Greek, *Pous, podos,* a foot, and *Stemon,* a Stamen; the stamens being supported on a common footstalk.]

SUB-MONOICOUS: Flowers in an entire sac, or spathe. *Calyx* 0. *Corolla* 0. *Stamens* 2 (rarely 3), collateral, supported on a common pedicel,—or, rather, monadelphous below. *Ovary* oblong-ovoid, bisulcate, striate. *Stigmas* 2, sessile, recurved. *Capsule* oblong-oval, 2-celled, 2-valved, many seeded. *Seeds* minute.

Small, submersed, coriaceous aquatics: attached to rocks or pebbles in shallow, running waters; leaves alternate, multifid; flowers axillary. *Nat. Ord.* 163. *Lindl.* PODOSTEMEÆ.

1. P. CERATOPHYLLUM, *Mx.* Leaves dichotomously many-parted; peduncles solitary, axillary. *Beck, Bot. p.* 124. ICON, *Mx. Am.* 2. *tab.* 44.

HORN-LEAVED PODOSTEMUM.

Annual? *Root* none: the plant adhering to pebbles by fleshy processes from the stem. *Stem* creeping, 1 or 2 to 4 inches long, roundish, smooth, branching; the branches attaching themselves to small pebbles,—or, in deep water, often erect. *Leaves* alternate, somewhat crowded above, dichotomously dissected; segments flatted, sublinear, coriaceous; petioles fleshy, with stipular processes at base which slightly sheath the stem. *Peduncles* axillary, short and fleshy; *flowers* enveloped in a coriaceous membrane, or spathe, without seam or natural opening, which is lacerated irregularly round when the stamens burst forth. *Stamens* 2 (occasionally 3); *filaments* short, united below into *one* larger fleshy filament, or pedicel. This pedicel is inserted at one side of the ovary, under its base,—with a little, subulate, flesh-colored filament, about a line in length, on each side of it. A similar, but smaller filamentous process, is found in the fork, or axil of each stamen. *Ovary* with a grooved suture on each side, and 4 dark purple *striæ* on each half, or valve. *Stigmas* 2, of a fleshy texture, sessile, curved towards the

anthers. Before the spathe is ruptured, the stamens are curved over, and repose on each side of the stigmas.

Hab. Pebbly, shallow waters: Brandywine, &c. abundant. *Fl.* Aug. *Fr.* Oct.

Obs. First recognized in the Brandywine, in 1828, by Mr. Joshua Hoopes. Every boy, and fisherman, who goes barefoot into the shallows of the Brandywine, is familiar with this plant, without suspecting that it ever bears visible flowers. It had always passed for some kind of crisp aquatic moss, until Mr. Hoopes detected it in bloom. It flowers much more abundantly when the waters are so shallow as occasionally to expose the plant to the air.

Our species comes very near the P. *abrotanoides*, described by Mr. *Nuttall*, in the Journal of the Philadelphia Academy, Vol. 7. p. 105,—except that the pedunicles are solitary. *Michaux's* figure seems to have been taken from a dried specimen: and does not well represent the habit of the plant. No other species, than the two here mentioned, are known in the United States.

[Anthoxanthum odoratum. *Triandria Digynia*]

CLASS III. TRIANDRIA.

Order 1. Monogynia.

§ 1. Flowers complete. a. *Ovary inferior.*

11. VALERIANELLA. *Mœnch. DC. Prodr.* 4. *p.* 625.
[A diminutive of *Valeriana*; from which this genus was separated.]

Calyx 3 to 5-toothed. *Corolla* tubular, somewhat unequally 5-lobed *Capsule* crowned with the persistent calyx, 3-celled, by abortion usually 1, or 2-seeded.

Herbaceous: Dichotomously branched above; leaves opposite; flowers corymbose. *Nat. Ord.* 165. *Lindl.* Valerianeæ.

1. V. radiata, *Dufr.* Leaves spatulate-oblong, narrowed at base, subdentate; fruit oblong, smooth, somewhat 4-sided. *Beck, Bot p.* 164.

Valeriana radiata. *Willd. Sp.* 1. *p.* 184. *Pers. Syn.* 1. *p.* 38.

Fedia radiata. *Mx. Am.* 1. *p.* 18. *Muhl. Catal. p.* 4. *Pursh, Am.* 1. *p.* 28. *Nutt. Gen.* 1. *p.* 21. *Bart. Phil.* 1. *p.* 20. *Ell. Sk.* 1. *p.* 42. *Torr. Fl.* 1. *p.* 35. *Eat. Man. p.* 145. *Florul. Cestr. p.* 6.

Radiated Valerianella. *Vulgò*—Lamb's Lettuce. Corn Salad.

Root annual. *Stem* 4 to 12 inches high, nearly glabrous. *Leaves* sessile, obtuse, somewhat ciliate on the margin. *Flowers* in fastigiate corymbs, with lanceolate bracts at base, forming a kind of involucre. *Corolla* pale blue, sometimes milk white.

Hab. Meadow banks: near West Chester: not common. *Fl.* May. *Fr.* June.

Obs. I strongly suspect this is an introduced plant,—at least in this County, and it seems to be very closely allied to the V. *olitoria*, of Europe. D. Townsend, Esqr. found it with *white* flowers, near Black Rock. The young leaves are said to make a good salad; but I believe they are not used here.

b. *Ovary superior.*

12. XYRIS. *L. Nutt. Gen.* 43.

[Greek. *Xyros*, acute or pointed; the leaves terminating in a sharp point.]

Bracts roundish, concave, cartilaginous, imbricated. *Calyx* glumaceous; sepals 2, boat-shaped. *Corolla* 3-petalled; petals crenate, with long, narrow claws. *Style* trifid. *Capsule* 1-celled, 3-valved. *Seeds* numerous.

Herbaceous: leaves radical, mostly ensiform, with dilated scarious bases: flowers in a terminal, ovoid, imbricated head. *Nat. Ord.* 233. *Lindl.* XYRIDEÆ.

1. *X.* CAROLINIANA, *Walt.* Scape ancipital; leaves linear, grass-like; head roundish-ovoid; bracts orbicular. *Beck, Bot. p.* 370.

X. jupicai. *Mx. Am.* 1. *p.* 23. *Bigel. Bost. p.* 17.
X. anceps. *Pers. Syn.* 1. *p.* 56. *Muhl? Catal. p.* 5.
X. flexuosa. *Bart. Phil.* 1. *p.* 25. *Ell. Sk.* 1. *p.* 51. *Florul. Cestr. p.* 7. *Also? Muhl. Catal. p.* 5.

CAROLINIAN XYRIS. *Vulgò*—Yellow-flowering Rush.

Root perennial, somewhat bulbous, cespitose. *Scape* erect, 10 or 12 inches high, often spirally twisted. *Leaves* shorter than the scape and sheathing its base, narrow, flat or twisted. *Bracts* roundish, concave, rigid, covering the fruit; the lower ones commonly empty. *Calyx* somewhat persistent; sepals rather shorter than the bracts, linear-lanceolate, incurved, sides compressed. *Corolla* yellow; the claws of the petals nearly as long as the bracts.

Hab. Sandy swamps: Barrens, N. of West Chester: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. This is the only species which has yet been found in Chester County,—although there are 3 or 4 others in the United States. I have collected, in New Jersey, the *X. fimbriata, Ell.* a large species which has not been given in any Flora of the Northern States.

§ 2. FLOWERS INCOMPLETE: *Spathaceous.*

a. *Ovary inferior.*

13. SISYRINCHIUM. *L. Nutt. Gen.* 36.

[Greek, *Sus*, a hog, *rhynchos*, a snout; hogs being supposed fond of rooting it up.]

Spathe 2-leaved, bract-like. *Perianth* corolla-like; limb flat, 6-lobed; lobes equal; tube short. *Stamens* with the filaments mostly united below. *Capsule* pedicellate, roundish, triquetrous, 3-celled, 3-valved.

Herbaceous, grass-like plants: stem compressed, ancipital; leaves marginally sheathing at base; flowers terminal, from spathaceous bracts. *Nat. Ord.* 239. *Lindl.* IRIDEÆ.

1. S. MUCRONATUM, *Mx.* Stem simple, narrow-winged, leafless; spathe colored; the outer valve longer than the peduncles, tapering to a rigid point. *Beck, Bot. p.* 353.

MUCRONATE SISYRINCHIUM. *Vulgò*—Blue-eyed Grass.

Root perennial, fibrous. *Stem* cespitose at base, 9 to 12 inches high, setaceously slender. *Leaves* all radical, narrow-linear, grass-like. *Spathe* of two very fine

qual valves; the outer one longer than the flowers, both tinged of a violet hue. *Flowers* 3 or 4 from each spathe. *Perianth* like a corolla, delicate blue.

Hab. Low grounds, and meadows: frequent. *Fl.* May. *Fr.* June.

2. S. ANCEPS, *Cavan.* Stem ancipital, broad-winged, subramose above, nearly leafless; valves of the spathe nearly equal, shorter than the peduncles. *Beck, Bot. p.* 354.
S. Bermudiana. *Mx. Am.* 2. *p.* 33. *Florul. Cestr. p.* 75. Also? *Willd. Sp.* 3. *p.* 578. *Pers. Syn.* 1. *p.* 50. *Ell. Sk.* 2. *p.* 152. *Eat. Man. p.* 342.

TWO-EDGED SISYRINCHIUM. *Vulgò*—Iris-leaved Blue-eyed Grass.

Root perennial. *Stem* cespitose, 12 to 18 inches high, compressed, with a broad-winged margin on each side, somewhat branching above, with a sheathing leaf at the base of the branches. *Leaves* broadish-linear, ensiform, tapering to a sharp point. *Spathe* of two nearly equal lanceolate valves, 2 to 5 flowered, both shorter than the flowers. *Perianth* blue. *Capsule* large, globose, on long projecting peduncles.

Hab. Woodlands, thickets, &c. frequent. *Fl.* June. *Fr.* July.

Obs. There is some confusion between this, and S. *Bermudiana*,—if they are really distinct plants. Dr. *Torrey*, and others, use part of the description of S. *Bermudiana*, as given in *Willd.* for the S. *anceps*, viz: "spatha floribus *breviore*;" whereas *Willdenow's* description of S. *anceps*, says "floribus *longiore*,"—and *Lamarck*, as quoted, says "spathis flores *superantibus*." In our plant, the spathe is decidedly *shorter* than the flowers; and I have no doubt it is the S. *Bermudiana* of *Elliott*. The foregoing are the only well ascertained species in the U. States.

14. IRIS. *L. Nutt. Gen.* 34.

[Its varied hues resembling those of the *Iris*, or rainbow.]

Perianth corolla-like, 6-parted; 3 of the lobes larger and reflected, the others erect or connivent. *Style* short, or none: *Stigmas* 3, petaloid, oblong, arched over the stamens. *Capsule* 3-celled, 3-valved, many seeded.

Herbaceous: leaves mostly ensiform, with sheathing margins below; bracts, of spathes, membranaceous. *Nat. Ord.* 239. *Lindl.* IRIDEÆ.

1. I. VERSICOLOR, *L.* var. *communis*, *Torr.* Stem erect, flexuose; leaves ensiform; perianth beardless; angles of the ovary not grooved when young; sides deeply concave; capsule obscurely triangular. *Beck, Bot. p.* 353.

I. virginica. *Florul. Cestr. p.* 6. Not of *L. and others.*

COLOR-CHANGING IRIS. *Vulgò*—Wild flag.

Root perennial, fleshy, large and creeping. *Stem* 2 to 3 feet high, rather taller than the leaves. *Flowers* 2 to 6 in a terminal raceme: lobes of the *perianth* spatulate, blue, variegated with yellow at base; inner lobes paler.

Hab. Margins of ponds, and miry places: frequent. *Fl.* May. *Fr.*

Obs. Seven or eight other species are enumerated in the U. States. Dr. *Bigelow* remarks that the root of this is a violent emetic.

b. *Ovary superior.*

15. SCHOLLERA. *Schreb. Gen. Pl.* 1711.
[Dedicated to *Fred. Adam Scholler*, a German Botanist.]

Spathe 1 flowered. *Perianth* corolla-like, with a long, slender tube; limb deeply 6-parted. *Anthers* of two forms. *Capsule* 1-celled.

An Herbaceous, grass-like aquatic. Nat. Ord. 246. *Lindl.* PONTEDERIÆ.

1. S. GRAMINEA, *Bart.* Stem slender, dichotomous, floating; leaves sessile, linear. *Beck, Bot. p.* 369. ICON, *Bart. Am.* 2. *tab.* 54.
S. graminifolia. *Muhl. Catal. p.* 5. *Torr. Fl.* 1. *p.* 41. *Eat. Man. p.* 327.
Leptanthus gramineus. *Mx. Am.* 1. *p.* 25. ICON, *Mx. l. c. tab.* 5. *f.* 2. *Pers. Syn.* 1. *p.* 56. *Nutt. Gen.* 1. *p.* 29. *Lindl. Ency. p.* 44.
Heteranthera graminea. *Pursh, Am.* 1. *p.* 32.
GRASS-LIKE SCHOLLERA.

Root perennial. *Stem* submersed, 1 to 2 feet long, radicating at the base of the lower leaves. *Leaves* narrow, 3 to 12 inches long. *Spathe* short, lanceolate. Tube of the *Perianth* very slender, long, and a little curved; limb yellow. *Stamens* 4; 3 of the *anthers* linear, and one abortive.

Hab. Flowing waters: Brandywine, Schuylkill, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. This slender, delicate-flowered plant, is pretty common in the Brandywine; but does not seem to bloom freely, every year. It is the only species of the genus.

16. HETERANTHERA. *Ruiz and Pavon. Fl. Peruv. (ex Torr.)*
[Greek, *Heteros*, different, and *anthera*; the anthers in the same flower being dissimilar.]

Spathe enclosing the flowers. *Perianth* corolla-like, tubular; limb 6-parted. *Anthers* of two forms. *Capsule* 3-celled, many seeded, opening at the angles; *dissepiment* contrary.

Herbaceous, creeping plants, growing in miry places: leaves alternate, with a sheathing base. *Nat. Ord.* 246. *Lindl.* PONTEDERIÆ.

1. H. RENIFORMIS, *R. and P.* Leaves orbicular-reniform; spathe oblong, acuminate, 3 to 5-flowered. *Beck, Bot. p.* 369.
H. acuta. *Pursh, Am.* 1. *p.* 32.
Leptanthus reniformis. *Mx. Am.* 1. *p.* 25. *Nutt. Gen.* 1. *p.* 29. *Lindl. Ency. p.* 44.
L. virginica, *and* peruviana. *Pers. Syn.* 1. *p.* 56.
KIDNEY-SHAPED HETERANTHERA.

Root perennial. *Stem* prostrate, radicating, 4 to 12, and 18 inches long. *Leaves* broad-reniform with semicircular nerves, somewhat acute, petiolate. *Spathe* enveloping the flowers, terminating in a cusp. *Perianth* white, imperfectly expanding, and very evanescent. *Stamens* somewhat collateral; two of the *Anthers* small, roundish, yellow, on short filaments,—the third large, oblong, greenish, on a longer filament. *Capsule* oblong, subtriangular.

Hab. Muddy margins of rivulets: frequent. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. There is one other species in the U. States, viz. H. *ovalis*; of which I have received beautiful specimens, with *blue* flowers, from my valued friend, Professor SHORT, of Lexington, Kentucky.

§ 3. FLOWERS GLUMACEOUS: *or consisting of single chaff-like Bracts, called Glumes,—which are imbricated in Spikelets, or Heads: Each fertile flower producing a single seed, or nut. Nat. Ord.* 262. *Lindl.* CYPERACEÆ. *

A. *Flowers generally Perfect, or Monoclinous.*

DIV. I. CYPEREÆ—*Spikelets with the Glumes imbricated Distichously.*

a. *Ovary destitute of Bristles.*

17. CYPERUS. *L. Nutt. Gen.* 52.

[An ancient Greek name, of uncertain Etymology.]

Spikelets compressed, distinct, many-flowered. *Glumes* imbricated in two rows, nearly all enclosing flowers. *Style* deciduous. *Seed* triquetrous, or lenticular.

1. C. STRIGOSUS, *L.* Umbel with elongated rays, bearing oblong loose spikes; spikelets linear, subulate, expanding horizontally; involucre of about 6 leaves, the exterior ones very long. *Beck, Bot. p.* 421. STRIGOSE CYPERUS. *Vulgò*—Bristle-spiked Galingale.

Root perennial, globose, with descending fibres. *Culm* triquetrous, 1 to 2 feet high. *Leaves* broad-linear, nearly as long as the culm, rough on the margin. *Umbel* 3 to 6 rayed; rays unequal, 1 to 3 inches long, triquetrous, sheathed at base; sheaths bifid. *Spikelets* yellowish, acute, bracteate at base, 10 or 12 flowered; flowers alternate. *Seed* oblong, triquetrous.

Hab. Wet meadows, and low grounds: frequent. *Fl.* Aug. *Fr.* Sept.

2. C. DIANDRUS, *Torr.* Umbel sessile, or few-rayed; rays unequal, with the spikelets in loose fascicled heads; involucre 3-leaved, two of them much longer than the umbel; spikelets lance-oblong, much compressed, acute, many-flowered; stamens 2. *Beck, Bot. p.* 421.

C. bicolor. *Bart. Phil.* 1. *p.* 27.

C. flavescens. *Florul. Cestr. p.* 8. Not of *L. and others.*

DIANDROUS CYPERUS.

Root perennial, fibrous. *Culm* 6 to 12 inches long, slender, somewhat decumbent or reclining, triangular, striate. *Leaves* few, shorter than the culm, with rather loose membranous sheaths. *Involucre* unequal; the longest leaves often 6 or 8 inches long. *Umbel* sometimes without rays,—generally 1 to 3,—and occasionally 5 or 6 rayed; *spikelets* one third to two thirds of an inch long, much compressed, and arranged in loose fascicles, or clusters. *Glumes* membranaceous, compressed, with purplish or chesnut-colored sides, and green keel. *Stamens* always 2. (*Torr.*) *Style* long, deeply 2-cleft. *Seed* obovate, compressed, grey, (finally dark brown,) minutely puncticulate, or rugose, under a lens.

Hab. Low grounds; margins of rivulets: common. *Fl.* Aug. *Fr.* Sept.

Obs. This species was mistaken for C. *flavescens*, when my Catalogue was published. *Muhlenberg* considered it a "*cc-species*," (*Gram. Descript. p.* 17.)—and in his Herbarium it immediately follows the C. flavescens, with the remark, "priori affinis." It appears, however, to be quite distinct from that species—which has not yet been found in Chester County.

* The Plants of this Section all belong to the *Natural Order* CYPERACEÆ, or Sedge Tribe,—somewhat allied to *Grasses;* but the stems, or *Culms*, are solid, or filled with a spongy pith-like substance,—generally without joints, or nodes, tapering, cylindric, or angular, (often triangular,)—and the *sheaths of the leaves* which embrace the culm are not slit, but entire. The *floral coverings* are now considered as real *Bracts*. The *Flowers* (with the exception, perhaps, of *Carex*,) are destitute of a *true Perianth;* but that organ is frequently substituted by *Hypogynous Setæ*, or Bristles surrounding the base of the ovary.

3. C. INFLEXUS, *Muhl.* Umbel conglomerate and simple, or 2 to 3-rayed; involuere 3-leaved, long; spikelets oblong, crowded into ovoid heads; glumes squarrose-uncinate at the tip. *Beck, Bot. p.* 421. SPECIM. *Gray, Gram.* 1. *no.* 68.
C. uncinatus. *Pursh, Am.* 1. *p.* 50. *Nutt. Gen.* 1. *p.* 35. *Bart. Phil.* 1, *p.* 29.
INFLEXED CYPERUS.

Root biennial, fibrous. *Culm* triquetrous, setaceous, 2 to 3 inches high, leafy at base. *Leaves* flat, as long as the culm. *Heads* 1 to 3; one sessile, the others on peduncles, or rays; each consisting of from 10 to 20 spikelets densely conglomerated. *Involucre* foliaceous; one of the leaves three times as long as the umbel. *Spikelets* linear-oblong, 8 to 12-flowered. *Glumes* yellowish, distinctly nerved, ovate, acuminate, with the points recurved. *Stamen* 1. (*Torr.*) *Seed* triquetrous.
Hab. Old fields, in moist places: Williston: not common. *Fl.* Aug. *Fr.* Sept.
Obs. Found by D. TOWNSEND, Esq. in Aug. 1829. The plant is somewhat fragrant. Mr. *Nuttall* seems to think it may be a *Mariscus.*

4. C. MARISCOIDES, *Ell.* Umbel simple and sessile, or with 1 or 2 rays; spikelets linear-lanceolate, collected in globose heads; glumes loose; lower ones obtuse, upper ones rather acute. *Beck, Bot. p.* 422. SPECIM. *Gray, Gram.* 1. *no.* 74.
Scirpus cyperiformis. *Muhl. Catal. p.* 7. *Ejusd. Gram. p.* 41.
Mariscus umbellatus. *Pursh? Am.* 1. *p.* 59. Also? *Nutt. Gen.* 1. *p.* 34. Not of *Lindl. Ency.*
M. glomeratus. *Bart. Phil.* 1. *p.* 30. *Florul. Cestr. p.* 9.
MARISCUS-LIKE CYPERUS.

Root perennial, tuberous. *Culm* triquetrous, slender, 6 to 12 inches long, nearly naked. *Leaves* mostly radical, linear, keeled. *Involucre* 3 or 4-leaved, unequal, longer than the umbel. *Heads* of spikelets 1 to 3; one sessile, the others pedunculate, or supported on rays 1 to 2 inches long. *Spikelets* 3 to 7 or 8-flowered, nearly terete when young, compressed when old. *Glumes* remote and loose, ovate, pale green. *Seed* oblong, triquetrous.
Hab. Sterile fields; Mica-slate hills: frequent. *Fl.* Aug. *Fr.* September.
Obs. About 20 other species of this genus are enumerated in the U. States.

18. MARISCUS. *Vahl. Nutt. Gen.* 51.

[Celtic, *Mar*, a marsh; relating to the place of growth of some species.]

Spikelets few-flowered, clustered in heads. *Glumes* somewhat imbricated in two rows: the lower ones short and empty. *Stamens* sometimes 2. *Style* trifid. *Seed* triquetrous.

1. M. OVULARIS, *Vahl.* Umbel simple; rays short; heads globose; spikelets terete, spreading. *Beck, Bot. p.* 429. SPECIM. *Gray, Gram.* 1. *no.* 76.
M. echinatus. *Ell. Sk.* 1. *p.* 75. ICON, *Ell. l. c. tab.* 3. *f.* 1. *Bart. Phil.* 1. *p.*30. *Eat. Man. p.* 220.
Scirpus echinatus. *Willd. Sp.* 1. *p.* 304. *Pers. Syn.* 1. *p.* 68. *Muhl. Catal. p.* 7. *Ejusd. Gram. p.* 39.
Kyllingia ovularis. *Mx. Am.* 1. *p.* 29. Also, *Pers. Syn.* 1. *p.* 57.
EGG-SHAPED MARISCUS.

Root perennial? bulbous, with descending fibres. *Culm* triangular, 6 to 18 inches high, nearly naked. *Leaves* shorter than the culm, situated at the base, keeled, nearly smooth. *Involucre* 4 or 5 leaved, unequal: 2 usually much larger than the rest, the longest about 3 times the length of the umbel. *Heads* 3 to 5, sometimes but one, globose, or oval; the middle one sessile, the rest on peduncles, or rays. *Spikelets* in the lower part of the head reflected when mature, 2 to 3 flowered, generally but one flower perfecting its seed. *Glumes* nerved; the lowest pair short, ovate and obtuse, the upper ones lanceolate. *Seed* oblong, brown.

Hab. Barrens: also near Black rock, Schuylkill: not common. *Fl.* Aug. *Fr.* Sept

Obs. Found by D. Townsend, Esq. in 1829. Those specimens collected on the mica-slate hills, seem to be the *var. tenellus*, of Torrey's Flora. In some intances the heads are *oblong*, and considerably resemble the M. *cylindricus*, of Mr. *Elliott*, from whom I received authentic specimens. Two other species are enumerated in the U. States.

b. *Ovary invested with Bristles.*

19. DULICHIUM. *Rich. Nutt. Gen.* 53.

[Greek, *Duo*, two, and *Leichen*, scab, or scale; in allusion to the two-rowed scale like glumes. *ex Eat.*]

Spikes axillary, somewhat racemose; *spikelets* linear-lanceolate, rather compressed; *Glumes* distichous, sheathing. *Stile* very long, bifid, base persistent. *Seed* compressed.

1. D. spathaceum, *Pers.* Culm terete, leafy; leaves alternate, nearly equal, pointing in three directions; spikelets spreading. *Beck, Bot. p.* 422. Icon, *Ell. Sk.* 1. *tab.* 2. *f.* 3. Specim. *Gray, Gram.* 2. *no.* 131.

Cyperus spathaceus. *Willd. Sp.* 1. *p.* 289. *Muhl. Catal. p.* 6. *Ejusd. Gram. p.* 26. *Bigel. Bost. p.* 19.

Scirpus spathaceus. *Mx. Am.* 1. *p.* 32.

Spathaceous Dulichium. *Vulgò*—Sheathed Galingale.

Root perennial. *Culm* 1 to 2 feet high, nodose, terete below, obscurely triangular above. *Leaves* linear-lanceolate, flat, 2 to 3 inches long, spreading almost horizontally, and regularly in three directions: sheaths cylindrical, shorter than the joints. *Spikelets* 5 to 7 flowered, sessile, alternate, on a common peduncle about as long as the internodes, and twice as long as the sheaths. *Glumes* lanceolate, acute. *Seed* oblong, compressed, (triangular, *Torr.*). *Bristles* about 6, retrorsely hispid, longer than the seed.

Hab. Swamps, and margins of ponds: common. *Fl.* July. *Fr.* Sept.

Obs. Believed to be the only species of the genus, in U. S. The seed, both in form and color, looks something like a miniature cucumber-seed.

DIV. II. Scirpeæ—*Spikelets with the Glumes imbricated on all sides.*

Ovary mostly invested with Bristles.

20. SCIRPUS. *L. Nutt. Gen.* 47.

[An ancient Latin name for the *Bull-rush*, which belongs to this genus.]

Spikelets ovoid, imbricated all round, many-flowered. *Seed* compressed, or triquetrous; sometimes naked, but generally invested with Bristles, or long hairs.

a. *Ovary destitute of Bristles.*

§ 1. *Seed* compressed; *Style* bifid, ciliate, bulbous at base. FIMBRISTYLIS. *Vahl.*

1. S. BALDWINIANUS, *Schult.* Spikelets ovoid-lanceolate, acute; umbel subcompound, about as long as the involucre; seed longitudinally furrowed. *Schult. Mant.* (*fide Torr. in Litt.*)
S. puberulus. *Muhl? Catal. p.* 7. Not of *Mx. Pursh*, nor *Nutt.*
S. ferrugineus. *Muhl. Gram. p.* 35. *Florul. Cestr. p.* 7. Not of *L. Willd. Pers. Ell.* nor *Torr.*
S. sulcatus. *Ell. Sk.* 1. *p.* 86. *Eat. Man. p.* 330. Not of *A. Du Petit Thouars.*
Fimbristylis ferruginea? *Beck, Bot. p.* 423. Also? *Eat. Man. p.* 147.
F. Baldwiniana. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
BALDWIN'S SCIRPUS.

Root perennial? fibrous. *Culm* 4 to 12 inches high, somewhat compressed, deeply striate, nearly glabrous, leafy at base. *Leaves* about as long as the culm, (sometimes much shorter), narrow-linear, striate, finely serrulate; *sheaths* pubescent at throat. *Umbel* small, some of the rays occasionally divided; central spikelet sessile. Leaves of the *Involucre* small, subulate, serrulate; one of them longer and erect. *Spikelets* ovoid, tapering to a point. *Glumes* nearly smooth, ovate, slightly keeled and mucronate, margins membranaceous; keel greenish, sides chesnut brown. *Style* bifid, ciliate-pubescent, tumid at base. *Seed* white, obovate, compressed, externally convex, distinctly grooved lengthwise, with the channels transversely corrugated.

Hab. Moist places; Serpentine Ridge, West Chester: frequent. *Fl.* July. *Fr.* Aug.

Obs. Dr. *Torrey* informs me this is *not* the S. *ferrugineus* of his Flora, (which proves to be a *var.* of S. *autumnalis, Muhl.*)—nor of *Linn. Willd.* &c. but that it is the S. *sulcatus*, of *Elliott*; which name had been previously appropriated, by M. *Du Petit Thouars.*

§ 2. *Seed* triquetrous; *Style* trifid, not ciliate, bulbous at base. *Glumes* somewhat 4—8 ranked, keeled. TRICHELOSTYLIS. *Lestib.*

2. S. CAPILLARIS, *L.* Culm nearly naked, triquetrous, capillary; spikelets ovoid, 2 or 3 of them pedunculate, with an intermediate sessile one. *Beck, Bot. p.* 426. SPECIM. *Gray, Gram.* 1. *no.* 84.
S. ciliatifolius. *Florul. Cestr. p.* 7. Not of *Ell.* (*Torr. in Litt.*)
Trichelostylis capillaris. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
HAIR-LIKE SCIRPUS.

Root annual? fibrous. *Culm* 4 to 8 or 10 inches high, very slender, leafy at base, cespitose. *Leaves* setaceous, radical, or sheathing the culm at base, much shorter than the culm; sheaths pilose at throat. *Spikelets* ovoid-oblong, subumbellate, generally 3 or 4, sometimes solitary; one, or two, sessile, the rest on peduncles about half an inch long. *Involucre* of 1 or 2 setaceous leaves; one of them frequently longer than the umbel. *Glumes* oblong; the lowest mucronate, the upper ones obtuse or emarginate; ferruginous, with pale green keel, margin pubescent. *Seed* white, triquetrous, transversely corrugated.

Hab. Sterile soils; near Serpentine Ridge, W. C.: not common. *Fl.* July. *Fr.* Aug.

Obs. I have specimens of this plant, from the late Mr. JOHN JACKSON, of this County, with umbels of 6 or 8 spikelets, and culms upward of a foot long.

3. S. AUTUMNALIS, *L.* Culm compressed, ancipital; umbel compound: involucre mostly 2-leaved; spikelets lanceolate, acute, somewhat 4-sided. *Beck. Bot. p.* 426. SPECIM. *Gray, Gram.* 1. *no.* 85.
S. Mucronulatus. *Mx. Am.* 1. *p.* 31.
S. Michauxii. *Pers. Syn.* 1. *p.* 68.
Trichelostylis autumnalis. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
AUTUMNAL SCIRPUS.

Root perennial, fibrous. *Culm* 2 or 3 to 12 inches high, two-edged, cespitose, leafy at base. *Leaves* grass-like, flat, linear, acute, nerved, serrulate near the end, shorter than the culm. *Spikelets* in compound or subpaniculate umbels; sometimes, conglomerate in threes, at the end of the branches, or rays. *Involucre* of 2 or 3-unequal leaves; the longest about the length of the umbel. *Glumes* brown, ovate-lanceolate, keeled, mucronate. *Seed* white, triquetrous, smooth.
Hab. Sandy swamps, and low grounds: Barrens: frequent. *Fl.* July. *Fr.* Aug.
Obs. First observed in 1828, in this County. Dwarf specimens occur about West Chester, with culms 2 to 3 inches long, and the spikelets pretty constantly conglomerated in threes.

b. *Ovary invested with Bristles.*

§ 3. *Style* 2 or 3-cleft; base dilated or bulbous, articulated to the seed, persistent. *Spikelet* solitary, terminal. *Bristles* straight, mostly retrorsely hispid. ELEOCHARIS. *Br.*

4. S. PALUSTRIS, *L.* Culm naked, terete, inflated, shining; spikelet oblong-lanceolate; seed obovate, somewhat compressed, punctate-rugose. *Beck, Bot. p.* 424.
Eleocharis palustris. *Lindl. Ency. p.* 48. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
MARSH SCIRPUS. *Vulgò*—Club-rush.

Root perennial, creeping. *Culm* erect, leafless, 1 to 3 feet high, very smooth, round, slightly striate. *Sheath* long, embracing the lower part of the culm. *Spikelet* sometimes oblique. *Glumes* rather obtuse; lower ones larger, and often empty. *Seed* yellowish, as long as the bristles, crowned with a conical tubercle. *Bristles* 3 or 4, retrorsely hispid.
Hab. Swampy meadows: Pughtown: rare. *Fl.* June. *Fr.* July.
Obs. Found by D. TOWNSEND, Esq. in 1830.

5. S. OBTUSUS, *Willd.* Culm naked, terete or somewhat compressed, sulcate; spikelet ovoid, obtuse; seed obovate, compressed, smooth. *Willd. enum.* (*fide Torr.*) SPECIM. *Gray, Gram.* 2. *no.* 132.
S. ovatus. *Muhl. Catal. p.* 6. *Pursh? Am.* 1. *p.* 54. Not? of *Willd. Pers.* &c.
S. capitatus. *Muhl. Gram. p.* 30. *Nutt. Gen.* 1. *p.* 32. *Bart. Phil.* 1. *p.* 31. *Ell. Sk.* 1. *p.* 77. *Bigel. Bost. p.* 20. *Torr. Fl.* 1. *p.* 45. *Florul. Cestr. p.* 7. *Beck, Bot. p.* 424. *Eat. Man. p.* 328. Not of *Linn.* (*Torr. in Litt.*)
Eleocharis obtusa. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
OBTUSE SCIRPUS.

Root perennial, fibrous. *Culm* erect, 4 to 18 inches high, cespitose, leafless, grooved, somewhat attenuated below the spikelet, sheathed at base; *sheaths* about 2, retuse, mucronate. *Spikelet* ovoid, often oblong and very obtuse, sometimes

nearly globose; *Glumes* ovate, rounded at the end, dark brown, with membranaceous whitish margins. *Style* 2—sometimes 3-cleft. *Seed* brown, smooth, shining, obovate, compressed, with a marginal ridge on each side; *tubercle* compressed, broad at base, acute. *Bristles* 6, somewhat longer than the seed, retrorsely hispid.

Hab. Swamps, and margins of ponds: frequent. *Fl.* June. *Fr.* July.

Obs. It seems uncertain whether this is the S. *capitatus*, of *Willd. Sp.* 1. *p.* 294; though he says it grows in Virginia. *Persoon* and *Pursh* are equally obscure. *Muhlenberg* thought it scarcely different from the S. *ovatus*, of *Willd.*—which may be the case: but he was undoubtedly mistaken in supposing that it might also be the S. *tuberculosus*, of *Mx. Am.*

6. S. TENUIS, *Willd.* Culm naked, slender, quadrangular, sulcate; spikelet elliptic, acute at each end; glumes ovate, obtuse; seed roundish obovoid, obtusely triangular, verrucose. *Beck, Bot. p.* 425.
S. quadrangulatus. *Muhl. Catal. p.* 6. Not of *Mx. Pers. Pursh, Ell.* nor *Eat.*
Eleocharis tenuis. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
SLENDER SCIRPUS.

Root perennial, creeping. *Culm* erect, 10 to 20 inches high, leafless, acutely 4-angled with the sides grooved, and a long, purple, truncate *sheath*, at base. *Spikelet* at first rather obtuse. *Glumes* dark brown, often nearly black, with a white, scarious margin; the lower ones larger, obtuse and empty. *Seed* light brown, roughly verrucose or muricate, crowned with a triangular dentate tubercle. *Bristles* 2 or 3, rarely wanting.
Hab. Swamps, and margins of ponds: frequent. *Fl.* June. *Fr.* July.

7. S. ACICULARIS, *L.* Culm naked, setaceous, quadrangular; spikelet ovate-oblong, few-flowered; glumes somewhat obtuse; seed trigonous, verrucose. *Beck, Bot. p.* 424. SPECIM. *Gray, Gram.* 2. *no.* 133.
S. capillaceus? *Mx. Am.* 1. *p.* 30. Also *Pers. Syn.* 1. *p.* 65.
S. trichodes. *Muhl. Catal. p.* 7. *Ejusd. Gram. p.* 30. *Ell. Sk.* 1. *p.* 76. *Bart. Phil.* 1. *p.* 31. *Florul. Cestr. p.* 7.
Also, S. pusillus. *Pursh. Am.* 1. *p.* 54.
Eleocharis acicularis. *Lindl. Ency. p.* 48. *Torr. Scirp. in Ann. Lyc. N. Y.* 3. *p.*
NEEDLE-LIKE SCIRPUS.

Root perennial? *Culm* 3 to 6 inches long, 4-angled, leafless, bristle-like, glabrous, cespitose, purple at base, and closely embraced by a truncate, obtuse sheath. *Spikelet* 4 or 5—(sometimes 8 or 10—) flowered, often perfecting but 1 or 2 seeds. *Glumes* with scarious margins; the lowest one larger and empty. *Style* 2 or 3-cleft, pubescent. *Seed* obovoid, trigonous, verrucose, yellowish and shining. *Bristles* 4, rarely wanting, twice as long as the seed, and scarcely hispid.

Hab. Margins of ponds, and miry places: Barrens: not common. *Fl.* July. *Fr.* Aug.

Obs. I have a variety, found by D. TOWNSEND, Esq. on the Mica slate hills, with culms 12 to 18 inches long, and yet equally slender and capillary as the small specimens. The roots are creeping, and apparently perennial.

8. S. PLANIFOLIUS, *Muhl.* Culm triquetrous, leafy at base; leaves linear, flat, nearly equalling the culm; spikelet ovate-oblong, compressed, about as long as the cuspidate bracts at the base. *Beck, Bot. p.* 425.
ICON, *Bart. Am.* 3. *tab.* 86. *f.* 3.
FLAT-LEAVED SCIRPUS.

Root a tuft of wiry fibres, perennial. *Culm* 6 to 12 inches long, cespitose, acutely triangular, finely serrulate on the angles. *Leaves* sub-radical, grass-like, striate, slightly keeled, margins scabrous; the lower ones short, broader, nerved and mucronate. *Spikelet* about 6-flowered; *glumes* ovate, mucronate, yellowish, with the keels and points green; the two lowest ones bract-form, the exterior one as long as the spikelet. *Style* 3-cleft. *Seed* triquetrous, reddish brown; *tubercle* small. *Bristles* 6, (3, *Muhl.* 4, *Torr.*) longer than the seed, hispid upwards, or with the teeth erect.

Hab. Rich, moist woodlands: frequent. *Fl.* May. *Fr* July.

Obs. This species, so different in habit from the others of this section, was first observed, here, in 1827.

§ 4. *Style* bifid, not bulbous at base, deciduous. *Bristles* straight, distinctly hispid. *Spikelets* subterminal, or lateral. True Scirpus.

9. S. debilis, *Muhl.* Culm naked, obtusely triangular, deeply striate; spikelets few, aggregated, subterminal, sessile, ovoid; glumes ovate, obtuse, mucronate. *Beck, Bot. p.* 425. Specim. *Gray, Gram.* 2. *no.* 135.

Weak Scirpus.

Root perennial, cespitose. *Culm* erect, 9 to 18 inches high, leafless, glabrous, loosely sheathed at base; *sheaths* 2 or 3, obliquely truncate, the upper ones mucronate. *Spikelets* 1 to 6 or 8,—generally about 3,—turgid, rather acute, bursting in a cluster from the side of the culm, two or three inches from its extremity; the summit becoming a kind of 1-leaved involucre. *Glumes* pale green, membranous, somewhat inflated. *Seed* black, shining, punctate, obovate, plano-convex with the flat side inward, mucronate with the persistent base of the style. *Bristles* 6, a little longer than the seed, retrorsely hispid.

Hab. Wet, sandy low grounds: Barrens: frequent. *Fl.* August. *Fr.* September.

10. S. lacustris, *L.* Culm naked, terete, attenuated above; panicle sub-terminal; spikelets ovoid, mostly pedunculate. *Beck, Bot. p.* 425. Specim. *Gray, Gram.* 2. *no.* 136.

S. acutus. *Bigel. Bost. p.* 22. Also? *Muhl. Catal. p.* 7. *Ejusd. Gram. p.* 33. *Bart. Phil.* 1. *p.* 33. *Torr. Fl.* 1. *p.* 49. *Beck, Bot. p.* 425. *Eat. Man. p.* 329.

Also, S. validus. *Pursh, Am.* 1. *p.* 56. *Ell. Sk.* 1. *p.* 81. *Nutt. Gen.* 1. *p.* 32.

Lake Scirpus. *Vulgò*—Bull-rush. Tall Club-rush.

Root perennial. *Culm* 4 to 6 or 8 feet high, leafless, glabrous, glaucous, round and tapering upwards, terminating in a cusp 1 to 2 inches long, above the panicle. *Sheaths* at the base of the culm, bearing short leaves. *Spikelets* in a decompound umbel, or unequal cymose panicle, often clustered in threes at the ends of the branches, with one or more sessile, in the centre. *Bracts* fuscous. *Glumes* brown, ovate, obtuse, mucronate, slightly pubescent, margins ciliate. *Seed* pale greenish white, obovate, compressed, convex on the back, mucronate. *Bristles* 4, retrorsely hispid, a little longer than the seed.

Hab. Margins of ponds, and ditches: frequent. *Fl.* June. *Fr.* August.

Obs. The Synonyms, quoted above, are used by several authors, as belonging to *distinct species*; but it is probable they are only *varieties*. *Withering* and *Lindley* say the culms of this plant are used in England, to make the *seats of chairs*, &c. But, in this country, they are not esteemed for that purpose: the *S. americanus*

Pers. being found much preferable. The latter species grows plentifully along the tide-water marshes of the Delaware; but has not yet been found in Chester County.

§5. *Style* 3-cleft, not bulbous at base, deciduous. *Bristles* tortuous, capillary, scarcely hispid. *Spikelets* numerous, terminal, in cymes or panicles. *Culm* leafy. TRICHOPHORUM. *Pers.*

11. S. ATROVIRENS, *Muhl.* Cyme compound, proliferous; spikelets densely conglomerated in heads of 10 to 20; glumes acute, distinctly mucronate, dark green. *Beck, Bot. p.* 426. SPECIM. *Gray, Gram.* 2. *no.* 137.
S. sylvaticus. *Mx. Am.* 1. *p.* 33. *Pursh? Am.* 1. *p.* 56. Not of *Willd.* &c.

DARK-GREEN SCIRPUS.

Root perennial. *Culm* 2 to 4 feet high, leafy, nodose, triangular. *Involucre* foliaceous, usually of three leaves, longer than the cyme. *Spikelets* ovoid, in a compound paniculate cyme, densely clustered in somewhat ovoid *heads*, of 8 or 10 to 20, or more; sometimes viviparous. *Glumes* ovate, acute, terminating in a distinct point, dark green, finally becoming brownish. *Seed* white, smooth, plano-convex, keeled on the back, mucronate. *Bristles* usually 4 or 5, about as long as the seed, nearly straight, with a minute, retrorse pubescence.

Hab. Swamps, and wet meadows: frequent. *Fl.* July. *Fr.* Aug.

Obs. The hypogynous bristles are commonly 4 in number, viz. 1 opposite the middle of the flat surface of the seed, 1 at each side, and one at the keel; but there is frequently *a pair* of them at the keel,—making 5 in all. This appears to be distinct from the S. *sylvaticus*, of Europe,—judging from an indifferent specimen in my possession.

12. S. BRUNNEUS, *Muhl.* Cyme decompound; spikelets clustered in heads of 3 to 6 or 8; glumes obtuse, submucronate, reddish brown. *Beck, Bot. p.* 426.
S. exaltatus. *Pursh, Am.* 1. *p.* 56. *Ell. Sk.* 1. *p.* 87. *Nutt. Gen.* 1. *p.* 32.

BROWN SCIRPUS.

Root perennial. *Culm* 2 to 3 feet high, nodose, obtusely triangular, clothed with loosely sheathing, broadish *leaves* nearly as tall as the cyme. *Involucre* 4 or 5-leaved. Principal branches of the *Cyme* about 5, unequal, with loose, truncate sheaths at base. *Spikelets* ovoid, rather larger than in the preceding species, commonly in clusters of 3 to 6,—sometimes more. *Glumes* ovate, keeled, rather obtuse, but slightly mucronate, at first yellowish green, finally reddish brown. *Seed* smooth, yellowish white, triquetrous or strongly keeled; beak very short. *Bristles* 4 or 5, nearly twice as long as the seed, tortuous, minutely hispid with very fine retrorse teeth.

Hab. Wet places: Brandywine: E. Nantmeal: not common. *Fl.* July. *Fr.* Aug.

Obs. Found by D. TOWNSEND, Esq. 1829. This species, though not so common, bears a considerable resemblance to the preceding, and may be mistaken for it, by young Botanists. I have noted the distinctive characters as carefully as I could. *Pursh* and *Elliott* notice a *viviparous* variety of this species, which I have not seen. I have, however, observed a *var.* of the S. *atrovirens*, with long, ovoid-lanceolate spikelets, which was completely viviparous.

13. S. Eriophorum, *Mx.* Panicle supradecompound, large, loose, flaccid, somewhat nodding; bristles much exserted, capillary, curled. *Torr. Fl.* 1. *p.* 50.

Eriophorum cyperinum. *Willd. Sp.* 1. *p.* 313. *Mit. Kew.* 1. *p.* 134. *Muhl. Catal. p.* 7.

Trichophorum cyperinum. *Pers. Syn.* 1. *p.* 69. *Muhl. Gram. p.* 47. *Nutt. Gen.* 1. *p.* 36. *Bart. Phil.* 1. *p.* 36. *Ell. Sk.* 1. *p.* 91. Icon, *Ell. l. c. tab.* 3. *f.* 4. *Florul. Cestr. p.* 8. *Lindl. Ency. p.* 50. *Beck, Bot. p.* 426.

Wool-bearing Scirpus. *Vulgò*—Brown Cotton-grass.

Root perennial. *Culm* 3 to 5 feet high, leafy, nodose, obtusely triangular, glabrous. *Leaves* lance-linear, about 2 feet long, nerved, margins and midrib scabrous; *sheaths* about half the length of the internodes, glabrous. *Involucre* of 4 long leaves resembling those of the culm, with several intermediate small ones. *Panicle* much divided and proliferous, the upper part pendulous; branches scabrous, sheathed at base. *Spikelets* ovoid, obtuse, in small umbels, or clusters, at the ends of the branches. *Glumes* lauce-oblong, rather acute, membranaceous, sides brown, keel green. *Style* 3-cleft, fuscous. *Seed* white, obovate-oblong, compressed, keeled on the back, acuminate. *Bristles* 6, five or six times as long as the seed, projecting much beyond the glumes, curled, light brown.

Hab. Swamps, and wet places: common. *Fl.* July. *Fr.* Aug.—Sept.

Obs. The spikelets, in some intances, are nearly all pedunculate; and in others they are sessile, in dense terminal clusters, of 3 to 6 or 8 in a cluster. This species approaches *Eriophorum*; and forms a kind of connecting link between that genus and Scirpus. There are, in the U. States, some 25 or 26 other species of Scirpus. as the genus is here constituted;—which is nearly in accordance with the sugges tions of my friend, Prof. *Torrey*. Several distinct genera have been formed from Scirpus, by modern Botanists, upon characters which are here used to groupe the species in Sections.

21. ERIOPHORUM. *L. Nutt. Gen.* 55.

[Gr. *Erion*, wool, and *phero*, to bear; the seeds being invested with wool-like hairs.

Glumes membranous, imbricated on all sides. *Seed* densely invested with long, soft, woolly or cottony hairs.

1. E. virginicum, *L.* Culm nearly terete below, obtusely triangular above; leaves flat, long; spikelets clustered, erect, nearly sessile; involucre 2 to 4-leaved. *Beck, Bot. p.* 427. Icon, *Ell. Sk.* 1. *tab.* 4. *f.* 1. Specim. *Gray, Gram.* 1, *no.* 89.

Virginian Eriophorum. *Vulgò*—Cotton Grass.

Root perennial, creeping, fibres numerous. *Culm* 2 to 4 feet high, nodose, leafy, smooth. *Leaves* few, lance-linear, 12 to 18 inches long, margins scabrous. *Involucre* generally of 2 narrow leaves, 4 to 6 inches long, and 1 or 2 smaller ones, distinctly serrulate on the margins. *Peduncles* 3 or 4, short, forming a kind of umbel; *spikelets* conglomerated, sessile on the peduncle, ovoid and acute when young. *Glumes* ovate, acute, membranous, nerved, sides brown, keel green, the lower ones empty. *Stamen* 1, *Torr.* (2, *Mx.*) *Style* 3-cleft, somewhat scabrous. *Seed* brown, obovate-oblong, plano-convex, strongly keeled, slightly acuminate. *Hairs* very numerous, finally long and cottony, whitish, with a rusty, ferruginous tinge.

Hab. Sphagnous swamps: Mica Slate range: frequent. *Fl.* July. *Fr.* Sept.

2. E. ANGUSTIFOLIUM, *Roth.* Culm somewhat triangular; leaves channelled-triquetrous, linear; spikelets several, pedunculate, finally nodding; peduncles smoothish. *Beck, Bot. p.* 427.
E. polystachyon, *var.* tenellum. *Torr. Synop. ined.* (*fide Gray.*)
SPECIM. *Gray, Gram.* 1. *no.* 91.
E. tenellum? *Nutt. Gen.* 2. *Suppl.*
NARROW-LEAVED ERIOPHORUM.

Root perennial, creeping. *Culm* 12 to 18 inches high, slender, nodose, leafy, smooth. *Radical leaves* mostly withered and dead when the plant is in flower, or fruit: *stem leaves* short, (1 to 2 or 3 inches long,) narrow, triquetrous with concave sides, obtuse (pungently acute, *Nutt.*); *sheaths* long, with a delicate white membrane at throat. *Involucre* of 1 leaf, linear-lanceolate, with a loose membranous sheathing base, generally shorter than the spikelets. *Spikelets* 2 to 4—usually 3—on short peduncles (1 or 2 of them sometimes near an inch long). *Glumes* ovate, striate, margins scarious. *Style* 3-cleft. *Seed* linear-oblong, triquetrous. *Hairs* very numerous, long, white, fine and cottony.
Hab. Wet meadows: E. Marlborough: E. Nantmeal: not common. *Fl.* May. *Fr.* June.
Obs. This plant is given by Dr. *Gray*, as above quoted; but in my copy he has added, in a note, "This is the real E. angustifolium; and I now think a good species." It grows abundantly at Wynn's Meadows, on the northern side of Chester County; and sparingly in the swamps in the Mica slate range, near West Chester: also in E. Marlborough, near Hayes' bridge. There are 3 other species in the U. States.

22. RHYNCHOSPORA, *Vahl. Nutt. Gen.* 49.

[Greek, *Rhynchos*, a snout, or beak, and *Spora*, seed; the seed being beaked.]

Spikelets few-flowered: *Glumes* imbricated on all sides; the lower ones empty. Base of the *Style* enlarged, persistent, articulated to the seed, crowning it with a conic *Tubercle*. *Seed* invested with hypogynous *Bristles*.

1. R. ALBA, *Vahl.* Culm triquetrous above; leaves setaceous; spikelets in corymbose fascicles; seed somewhat lenticular, twice as long as the tubercle; bristles about 10. *Beck, Bot. p.* 428. SPECIM. *Gray, Gram.* 1. *no.* 92.
Schœnus albus. *Willd. Sp.* 1. *p.* 267. *Mx. Am.* 1. *p.* 34. *Pers. Syn.* 1. *p.* 59. *Muhl. Catal. p.* 5. *Ejusd. Gram. p.* 5. *Bigel. Bost. p.* 17.
WHITE RHYNCHOSPORA. *Vulgò*—White Bog-rush.

Root perennial, creeping. *Culm* 1 to 2 feet high, slender, leafy, glabrous. *Leaves* setaceous, shorter than the culm. *Fascicles* of spikelets terminal and axillary, with setaceous bracts at base. *Spikelets* lanceolate, acute at each end. *Glumes* ovate-lanceolate, acute, white, finally brownish. *Stamens* 3, 2, or 1. *Style* bifid. *Seed* smooth, nearly lenticular, narrowed at base, and somewhat stipitate. *Tubercle* compressed, half as long as the seed. *Bristles* retrorsely hispid, as long as the seed and tubercle.
Hab. Swamps, in the Mica Slate range: not common. *Fl.* July. *Fr.* Sept.
Obs. Found by D. TOWNSEND, Esq. 1828.

2. R. GLOMERATA, *Vahl.* Culm obtusely triangular; leaves flat; spikelets in corymbose fasciculate clusters, terminal and axillary, distant, often in pairs; seed obovate, lenticular, as long as the tubercle; bristles 6. *Beck, Bot. p.* 428. SPECIM. *Gray, Gram.* 1. *no.* 94.
Also, R. capitellata. *Ell. Sk.* 1. *p.* 61. *Nutt. Gen.* 1. *p.* 33.

Schœnus glomeratus. *Willd. Sp.* 1. *p.* 266. *Pers. Syn.* 1. *p.* 59. *Muhl. Catal. p.* 6. *Ejusd. Gram. p.* 8.
S. capitellatus? *Mx. Am.* 1. *p.* 36.
Also? S. capitatus. *Pers. Syn.* 1. *p.* 60. *Muhl. Catal. p.* 6. *Ejusd. Gram. p.* 10.
Clustered Rhynchospora. *Vulgò*—Brown Bog-rush.

Root perennial. *Culm* 2 feet high, leafy and smooth. *Leaves* linear, shorter than the culm, keeled, margins scabrous. *Spikelets* in corymbose or subcapitate fascicles, on included or somewhat exserted peduncles, terminal and lateral, often two or more from the same sheath; the lower ones distant. *Glumes* dark chesnut brown, lanceolate, keeled, mucronate. *Style* bifid. *Seed* brownish, attenuate at base, smooth and shining. *Tubercle* subulate, compressed, as long as the seed. *Bristles* retrorsely hispid, nearly as long as the seed and tubercle.

Hab. Swamps, and Bog meadows: common. *Fl.* June. *Fr.* August.

3. R. cymosa, *Nutt.* Culm triquetrous; leaves flat, linear; corymbs somewhat cymose, terminal and axillary, the terminal ones larger; seed subcompressed, obovate, transversely undulate-rugose, 3 or 4 times as long as the tubercle. *Beck, Bot. p.* 429. Not of *Ell.*
Schœnus cymosus. *Willd. Sp.* 1. *p.* 265. *Pers. Syn.* 1. *p.* 59. *Muhl. Catal. p.* 6. *Ejusd. Gram. p.* 8.
Cymose Rhynchospora.

Root perennial. *Culm* 12 to 18 inches high, leafy, slender, acutely triangular, angles slightly scabrous. *Leaves* grass-like, keeled, smoothish; radical ones somewhat crowded, upper cauline ones often overtopping the culm; *sheaths* striate. *Spikelets* in fascicled cymes, aggregated in clusters of 3 to 5, at the ends of the peduncles; peduncles unequal, with setaceous bracts at the divisions. *Glumes* fuscous; the lower ones obcordate, mucronate, the others ovate, mutic. *Style* bifid. *Seed* pale brown, corrugated, compressed, or somewhat tumid. *Tubercle* depressed-conic, whitish, about one-third the length of the seed. *Bristles* 3? (6, *Gray,*) shorter than the seed, slightly hispid upwards.

Hab. Moist grounds: Eachus' clearing, near W. Chester: rare. *Fl.* July. *Fr.* Aug.
Obs. I find in this species but *three* minute bristles, along with the persistent filaments. The plant is somewhat rare, here, and was first detected by D. Townsend, Esq. in 1832. There are 27 other species in the U. States; all of which are fully described in Dr. *A. Gray's* excellent Monograph of North American Rhynchosporæ, published in the 3d Vol. of the Annals of N. Y. Lyceum.

B. *Flowers chiefly Monoicous, or Diclinous.*

DIV. I. Sclereæ—*with Fruit naked, more or less hard and bony.*

23. SCLERIA. *L. Nutt. Gen.* 734.

[Greek, *Skleros*, hard; in reference to its hard, bone-like seeds.

Monoicous: *Staminate* and *Pistillate Flowers* in the same clusters. Stam. Fl. *Glumes* 2 to 6, mucronate, many-flowered. *Paleæ* mutic, or unarmed. Pistil. Fl. *Glumes* 2 to 6, 1-flowered. *Paleæ* 0. *Stigmas* 1 to 3. *Seed*, or *Nut*, globose, colored.

1. S. triglomerata, *Mx?* Culm acutely triquetrous, scabrous; leaves broad-linear, somewhat scabrous; spikes subterminal, alternate,

fasciculate ; glumes cuspidate ; nut smooth and polished. *Beck, Bot. p.* 430. Specim. *Gray, Gram.* 1. *no.* 98.

Three-clustered Scleria. *Vulgò*—Whip Grass.

Root perennial. *Culm* nearly erect, 3 to 4 feet long, leafy, acutely triquetrous, striate, angles scabrous. *Leaves* broadish, lance-linear, nerved, margins scabrous. *Fascicles* about 3, subsessile, one of them terminal, the others lateral near the summit, each composed of a few aggregated spikelets. *Bracts* foliaceous, much longer than the spikes. *Glumes* ovate, cuspidate, keeled, variegated with dark purple. *Pistillate* flowers, 2 or 3 in each cluster. *Stigmas* 3. *Nut* globose, somewhat mucronate, and stipitate, smooth and shining, at first bluish, finally white.

Hab. Serpentine ridge ; Great Valley : frequent. *Fl.* June. *Fr.* July.

Obs. This is, doubtless, the S. triglomerata, *Muhl.* and probably of *Elliott*. Whether it be *Michaux's* plant is not quite so clear : and it certainly is not the S. *triglomerata*, of *Pursh*—if his description may be relied upon.

2. S. pauciflora, *Muhl.* Culm triquetrous, smoothish ; leaves narrow-linear ; spikes lateral and terminal, few-flowered, the lateral ones on long peduncles ; glumes nearly smooth ; nut papillate. *Beck, Bot. p.* 430. Not ? of *Willd. Pers.* nor *Pursh.*

S. ciliata ? *Mx. Am.* 2. *p.* 167. *Willd. Sp.* 4. *p.* 318. *Pers. Syn.* 2. *p.* 549. *Pursh, Am.* 1. *p.* 46. Also ? *Muhl. Catal. p.* 84. *Ell. Sk.* 2. *p.* 559. *Eat. Man. p.* 332.

Few-flowered Scleria.

Root perennial. *Culm* erect, 9 to 18 inches high, leafy, slender, triquetrous, striate, nearly glabrous below, roughish above. *Leaves* linear, narrow, somewhat pilose, roughish on the margin ; sheaths pubescent. *Fascicles* few-flowered ; the lateral ones usually 2 in number, on long slender peduncles, the lower ones proceeding from a sheath near the base of the culm. *Bracts* longer than the spikes, ciliate. *Glumes* ovate, acuminate, keeled, smooth or slightly pubescent. *Stigmas* 3, pubescent. *Nut* globose, mucronate, rough all over with elevated points, white.

Hab. Serpentine ridge, West Chester : not common. *Fl.* June. *Fr.* July.

Obs. I can discover no material difference between our plant and the S. *ciliata, Mx.* and *Ell.* of which I have received specimens from N. Carolina, from my valued friend and correspondent, Mr. M. A. Curtis. The S. *hirtella, Mx.* which *Muhlenberg* thought might be the same, is a stouter and more hirsute plant, apparently quite distinct. I suspect the S. pauciflora, *Muhl.* is, in fact, the S. *ciliata*, of *Mx. Willd. Pers. Pursh*, &c. and that the S. pauciflora, of those last mentioned authors (although the description does not suit,) may be intended for the S. *oligantha*, of *Mx.* and *Elliott*—a very distinct species, with a smooth, polished nut. I have received the S. hirtella, and S. oligantha, from Mr. Curtis. Six or seven additional species are enumerated in the U. States.

DIV. II. Caricæ—*Spikelets, or aments, with the glumes imbricated all round Seed (Nut, or Caryopsis,) enclosed in a Utricle, or persistent, ventricose, chaffy Perianth.*

24. CAREX. *L. Nutt. Gen.* 733.

[Latin, *Carere*, to lack, or want ; the staminate spikes being destitute of fruit.]

Monoicous (rarely *Dioicous*) : *Flowers* collected into an imbricated *Spikelet. Glume* 1-flowered. Staminate Fl. in the same spikelet with the Pistillate, or in a separate one : *Glumes* single, lanceolate, persistent, the lower ones often empty. *Perianth* 0. Pistillate Fl. *Glumes* as in the Staminate. *Perianth* glumaceous, mostly urceolate

and acuminate, enclosing the ovary, opening at summit by an entire, or bidentate orifice, persistent. *Stigmas* 2—3, exserted, subulate-linear. *Seed* (*Nut*, or *Caryopsis*,) crustaceous, triquetrous, or subtriangular-compressed.

A. Spikelets all Androgynous.

a. *Spikelet mostly solitary.* † *Summit Staminate.* *Stigmas* 3.

1. C. polytrichoides, *Muhl.* Spikelet simple; fruit lance-oblong, compressed-triquetrous, obtuse; glumes oblong, rather obtuse, mucronate. *Beck, Bot. p.* 431. Specim. *Gray, Gram.* 2. *no.* 140. C. microstachya. *Mx. Am.* 2. *p.* 169. Not of *Willd.* nor *Pers.* Polytrichum-like Carex.

Culm 9 to 18 inches high, very slender, almost capillary, triquetrous, naked above, longer than the leaves. *Leaves* mostly subradical, annotinous (or renewed every year,) very narrow, grooved, becoming convolute when dry. *Spikelet* linear-oblong. *Staminate florets* 4 to 8; *Glumes* oblong, rather acute, with a broad-fuscous margin. *Pistillate florets* about 5; *glumes* ovate, obtuse or acute, keeled, mucronate, the lowest one often elongated and long-mucronate, but scarcely foliaceous. *Fruit* obtusely triquetrous, oblong, slightly nerved, smooth.

Hab. Open woodlands, and low grounds: frequent. *Fl.* May. *Fr.* June.

Obs. The roots of all the species are believed to be *perennial*. This one was first observed, here, in 1827.

† † *Summit Pistillate.*

2. C. squarrosa, *L.* Spikelet simple, mostly solitary, thick, oblong-cylindric; fruit imbricate, at length horizontal, subsquarrose, glabrous, longer than the glume. *Beck, Bot. p.* 431. Icon, *Schw. & Torr. Monogr. tab.* 27. *f.* 2. Specim. *Gray, Gram.* 2. *no.* 142. C. typhina. *Mx. Am.* 2. *p.* 169. Also, *Pers. Syn.* 2. *p.* 535. Squarrose Carex.

Culm about 2 feet high, rather slender, acutely triquetrous, nearly smooth, leafy. *Leaves* lanceolate, nerved, 3 or 4 of the upper ones longer than the culm. *Spikelet* cylindric-oval, about an inch long, and half an inch thick, terminal and solitary; sometimes 2, rarely 3; the additional ones axillary, on short peduncles, near the summit. *Sterile florets* at the base of the spikelet, dry and decurrent on the peduncle. *Glumes* lance-oblong, acute, scarious. *Fruit* horizontal, (erect when young,) turbinate and inflated, nerved, produced into a long, conical, bifid beak. *Seed* much smaller than the envelope, oblong, triquetrous.

Hab. Moist, low grounds; borders of woods: frequent. *Fl.* May. *Fr.* July.

b. *Spikelets several:* † *Aggregated into a head: Summit Staminate.*

3. C. cephalophora, *Muhl.* Spikelets aggregated into an elliptic, or ovoid head; fruit ovate, compressed, with scabrous margins above, a little longer than the ovate, subaristate glume. *Beck, Bot. p.* 431. Head-bearing Carex.

Culm 1 to 2 feet high, erect or decumbent, acutely triquetrous, striate, naked above, leafy near the base. *Leaves* sub-radical, lance-linear, often very long, furrowed; midrib rounded and prominent. *Spikelets* 3 to 6, terminal, closely approximated at base, so as to form a single head, which appears to be trifid below. *Sterile florets* at the summit of each spikelet. *Glumes* shorter than the fruit, ovate, keeled, muspidate. Two subulate, or filiform, scabrous *bracts*, at the base of the compound

spike, scarcely equalling it in length, and generally spreading or recurved. *Fruit* ovate, compressed, marginate, nerved or nerveless; apex acuminate, bifid, serrulate on the margin. *Seed* ovate.

Hab. Grassy, open woodlands, and hill sides: frequent. *Fl.* May. *Fr* July.

† † *Spikelets distinct: Stigmas* 2. * *Summit Staminate.*

4. C. ROSEA, *Schk.* Spikelets 4 to 6, remote, about 9-flowered, the lowest one with a setaceous bract often overtopping the culm; fruit compressed, ovate, acuminate, marginate, diverging and radiate, nearly twice as long as the glume; margins incurved, scabrous. *Beck, Bot. p.* 432, SPECIM. *Gray, Gram. 2. no.* 145.

Also ? C. retroflexa. *Muhl. and others.*

ROSE CAREX.

Culm erect or decumbent, 9 to 18 inches long, slender, 3 or 5 angled, leafy near the base. *Leaves* linear, narrow, often as long and even longer than the culm: the *sheaths* at base leafless, or with very short leaves. *Spikelets* 3 or 4 to 6; the lower ones nearly an inch remote from each other, the two upper ones closely approximated; each 9 to 12-flowered, of which but one or two at the summit are staminate and deciduous. *Glumes* about half as long as the fruit, sometimes obtuse, generally acute, and often mucronate. *Fruit* a little concave on the inner side, with an acute margin, which is somewhat incurved, and scabrous on the edge.

Hab. Moist woodlands, and low grounds: frequent. *Fl.* May. *Fr.* July.

Obs. Dr. *Muhlenberg* suspected his C. *retroflexa* might be a *var.* of this; and it is given as a synonym by Dr. *Gray, l. c.*—though Prof. *Dewey* is of opinion it is sufficiently distinct.

5. C. MUHLENBERGII, *Schk.* Spikelets about 5, ovoid, obtuse, alternate, crowded at the summit of the culm, bracteate at base; fruit broad-ovate, compressed, nerved, marginate, somewhat diverging, rather shorter than the ovate mucronate glume. *Beck, Bot. p.* 432.

MUHLENBERG'S CAREX.

Culm 1 to 2 feet high, triangular, striate, scabrous on the angles above, smooth and leafy below. *Leaves* linear-lanceolate, keeled, nerved, scabrous on the margin, about as long as the culm, lower ones short; *sheaths* striate, scarious and often transversely rugose on the side of the stipule. *Spikelets* 5 to 7, rather clustered, the uppermost one often almost entirely staminate; the others with each an ovate-lanceolate *bract* at base, ending in a scabrous awn longer than the spikelet. *Staminate glumes* lanceolate, acuminate. *Pistillate glumes* ovate, long-mucronate. *Fruit* compressed, concavo-convex, minutely serrulate on the margin, at length diverging, bifid at the apex.

Hab. Hill sides: foot of Barren ridge: not common. *Fl.* May. *Fr.* July.

Obs. Resembles C. *cephalophora*, in general appearance; but the spikes are more numerous, and not crowded into so compact a head. The fruit and glumes also serve to distinguish it.

6. C. STIPATA, *Muhl.* Spikelets numerous, bracteate, crowded into a terminal, lance-oblong, compound spike; bracts subulate, scabrous, generally shorter than the spikelets; fruit lanceolate, plano-convex, nerved, spreading, nearly twice as long as the glume, the beak long and tapering, serrulate on the margin. *Beck, Bot. p.* 432. SPECIM. *Gray, Gram. 2. no.* 147.

C. vulpinoidea. *Mx. Am. 2. p.* 169.

CROWDED CAREX.

Culm 1 to 3 feet high, rather stout and succulent, acutely triquetrous; scabrous above, leafy. *Leaves* about as long as the culm, (longer when young,) broad-linear or lanceolate, nerved, margin scabrous; *sheaths* striate, somewhat loose and membranous. *Spikelets* numerous, 6 to 12 or 15, oblong, sessile, crowded, lower ones diverging. At the base of each is usually a subulate *bract*; all shorter than the spikelets, except the lower one, which is often longer. *Glumes* ovate-lanceolate, acuminate, scarious, shorter than the fruit. *Fruit* oblong-lanceolate, distinctly nerved, convex and gibbous at base, tapering and plano-convex above, with a narrow, sharp, serrulate margin, and bifid apex.

Hab. Swamps, and low grounds: common. *Fl.* April. *Fr.* June.

7. C. SPARGANIOIDES, *Muhl.* Spikelets about 8, ovoid; upper ones approximate, lower ones somewhat distant; fruit compressed, ovate, acuminate, diverging, scabrous on the margin, twice as long as the ovate mucronate glume. *Beck, Bot. p.* 432. SPECIM. *Gray, Gram.* 2. *no.* 148.

SPARGANIUM-LIKE CAREX.

Culm about 2 feet high, triquetrous, striate, scabrous above, leafy towards the base. *Leaves* broad-linear or lanceolate, flat, striate, about as long as the culm; those near the base short; *sheaths* membranous, loose, often whitish. *Spikelets* 6 to 10, clustered above, 2 to 4 of the lower ones rather distant, with linear-ovate, or lance-linear, scabrous *bracts* at base, which are sometimes longer than the spikelets. *Glumes* ovate, mucronate. *Fruit* compressed, diverging and nearly horizontal, nerveless or indistinctly nerved, scabrous on the margin, bidentate at apex, yellowish when mature.

Hab. Swampy low grounds: frequent. *Fl.* May. *Fr.* July.

8. C. MULTIFLORA, *Muhl.* Spike oblong, decompound, interrupted, bracteate; spikelets glomerate, ovoid-oblong, obtuse; fruit compressed, ovate, acuminate, crowded, 3-nerved, scabrous on the margin, at length diverging, rather shorter than the ovate cuspidate glume. *Beck, Bot. p.* 433. SPECIM. *Gray, Gram.* 2. *no.* 149.

MANY-FLOWERED CAREX.

Culm about 2 feet high, obtusely triangular at base, triquetrous above, leafy. *Leaves* linear-lanceolate, channelled, scabrous on the margin, the upper ones taller than the culm: *sheaths* transversely rugose opposite the leaves. *Spike* decompound and somewhat paniculate, 2 to 3 inches long, formed of numerous spikelets which are crowded into clusters a little separated from each other, and either appressed to the rachis or diverging. *Bracts* under the spike, and principal clusters, often long and foliaceous; at the base of the spikelets, short, setaceous and scabrous. *Staminate glumes* lanceolate, with a short point: *Pistillate glumes* ovate, with a longer serrulate point. *Fruit* 3-nerved, bifid at apex, rather small, densely crowded, finally much diverging and yellowish.

Hab. Swamps, and low grounds: common. *Fl.* May. *Fr.* July.

Obs. The C. *setacea, Dewey*, which greatly resembles this, I believe has not yet been found in Chester County.

* * *Summit Pistillate.*

9. C. LAGOPODIOIDES, *Schk.* Spikelets numerous, (10 to 16 or 20,) elliptic, approximate, bracteate; bract beneath the lowest overtopping the culm; fruit lanceolate, acuminate, erect, with a narrow serrulate

margin, nearly twice as long as the ovate-lanceolate glume. *Beck, Bot. p.* 434.
C. Richardi. *Mx. Am.* 2. *p.* 170.
HARESFOOT-LIKE CAREX.

Culm erect, about 2 feet high, triangular, sulcate, scabrous above, leafy to half its height. *Leaves* mostly longer than the culm, linear-lanceolate, nerved, pale green. *Spikelets* usually 10 or 12, sometimes 18 or 20, sessile, cylindric-ovoid, or obovoid, approximate, sometimes clustered into a head; under the lowest a foliaceous *bract*, often longer than the culm, deciduous. *Glumes* lanceolate, not mucronate, with a scarious margin and green keel, rather more than half as long as the fruit. *Fruit* long-lanceolate, erect, bicuspidate, nerved margin narrow, ciliate-serrulate.

Hab. Swampy places; West Chester: Pughtown; frequent. *Fl.* May. *Fr.* July

10. C. SCOPARIA, *Schk.* Spikelets about 5, ovoid, approximate, clustered, lowest one bracteate, bract deciduous; fruit lanceolate, slightly ovate at base, erect, smoothish, nerved, longer than the lanceolate acuminate glume. *Beck. Bot. p.* 434.
C. leporina. *Mx. Am.* 2. *p.* 170. Not of *Willd. Pers. Pursh, Nutt.* nor *Ell.*
BESOM-LIKE CAREX.

Culm 1 to 2 feet high, triquetrous, scabrous above, smooth and leafy below. *Leaves* linear, narrow, acuminate, scabrous on the margin, shorter than the culm. *Spikelets* generally 5 to 7, sometimes 8 or 10, approximate at the extremity of the culm, often aggregated into a clavate, somewhat nodding head; the lowest with a deciduous *bract*, frequently as long as the head, the others with glume-like bracts, terminating in long setaceous points. *Glumes* lanceolate, acuminate, keeled, shorter than the fruit, brownish. *Fruit* ovate-lanceolate, with a long acumination, distinctly margined but scarcely winged, about 9-nerved, bifid at apex and scabrous above, tawny when mature.

Hab. Swamps, and wet meadows: common. *Fl.* May. *Fr.* July.
Obs. This species has much resemblance to the preceding, and may be readily confounded with it by inattentive observers. It is also allied to the following.

11. C. STRAMINEA, *Willd.* Spikelets about 5, roundish-ovoid, approximate, with short bracts at base; fruit much compressed, ovate, abruptly acuminate, with a broad-winged ciliate-serrate margin, a little longer than the lanceolate glume. *Beck, Bot. p.* 434.
STRAW-LIKE, OR STRAW-COLORED CAREX.

Culm 1 to 2 feet high, triquetrous, somewhat scabrous, leafy. *Leaves* linear-lanceolate, shorter than the culm, lower ones abbreviated; *sheaths* striate, rather loose. *Spikelets* usually 5 or 6, sometimes only 3 or 4, each furnished with an ovate cuspidate *bract* at base; the setaceous points of the two lower bracts sometimes longer than the spikelets. *Glumes* slightly mucronate, finally straw-colored. *Fruit* broad-ovate, beaked, bifid at apex, nerved, the margin dilated into wings on each side, with a nerve in each wing. *Seed* oval, compressed, punticulate, much smaller than its envelope.
Hab. Moist low grounds: West Chester: frequent. *Fl.* May. *Fr.* July.

12. C. FESTUCACEA, *Schk.* Spikelets 5 to 8, obovoid, mostly approximate; fruit ovate, plano-convex, acuminate, with a narrow-winged scabrous margin, at length diverging, longer than the ovate-lanceolate glume. *Beck, Bot. p.* 435.
FESTUCA-LIKE CAREX.

Culm 2 to 3, and sometimes 4 feet long, often decumbent, triangular, sulcate, smooth, leafy. *Leaves* linear-lanceolate, shorter than the culm. *Spikelets* usually 5 or 6, occasionally 8 or 10, sometimes rather distant, at first somewhat oval, at length obovoid, the base being contracted and composed of appressed staminate glumes, finally subglobose. *Bracts* lanceolate, shorter than the spikelets. *Glumes* lance-ovate, acute, scarious, often silvery white, with a green keel, shorter than the fruit. *Fruit* ovate, plano-convex, striate or nerved, with a bidentate beak; margin distinctly but not broadly winged, serrulate.

Hab. Meadows, and open woodlands: frequent. *Fl.* May. *Fr.* July.

Obs. This species is nearly allied to the preceding.

13. C. STELLULATA, *Gooden.* var. *scirpoides.* Spikelets 3, rather remote, the uppermost one clavate, the others ovoid, obtuse; fruit ovate, often subcordate, plano-convex, somewhat spreading, but not reflexed, serrulate on the margin, longer than the ovate glume.

C. scirpoides, *Schk. Willd. Sp.* 4. *p.* 237. *Pers. Syn.* 2. *p.* 538. *Muhl. Catal. p.* 83. *Ejusd. Gram. p.* 225. *Pursh, Am.* 1. *p.* 37. (*excl. Syn. Mx.*) *Nutt. Gen.* 2. *p.* 204. *Ell. Sk.* 2. *p.* 532. *Dew. Caric. in Sill. Journ.* 8. *p.* 96. (*excl. Syn. Mx.*) *Schw. & Torr. Monogr. p.* 317. (*excl. Syn. Mx.*) *Torr. Comp. p.* 339. *Beck, Bot. p.* 435. *Eat. Man. p.* 70.

C. stellulata? *Bigel. Bost. p.* 337.

STAR-LIKE CAREX, Scirpus-like *Variety.*

Culm erect, 6 to 12 inches high, triquetrous and slightly scabrous above, rather terete below, leafy towards the base. *Leaves* narrow, linear, erect, glaucous, somewhat scabrous, generally longer than the culm, the lower ones abbreviated. *Spikelets* mostly 3, (sometimes 2, rarely 4 or 5,) the lowest supported by a *bract* longer than the spikelet; the uppermost one with numerous staminate glumes at base, which give it a tapering club-shaped appearance. *Staminate glumes* ovate, rather obtuse: *Pistillate glumes* ovate, acute. *Fruit* ovate, often cordate at base, terminating in a short, bifid, scabrous beak, erect, or finally spreading nearly horizontally.

Hab. Woodlands, and wet meadows: frequent *Fl.* May. *Fr.* July.

Obs. This has generally been considered distinct from C. *stellulata;* though *Muhlenberg*, and others, doubted whether it were specifically so. Dr. *Gray*, (*Gram. et Cyper.* 2. *no.* 152.) makes them synonymous. To me it appears to constitute a well marked *variety*—comparing it with the C. *stellulata*, in Dr. *Gray's* work,—and other specimens, received from different correspondents. The *true C. stellulata*, as I understand it, has not yet been found in Chester County.

☞ After the preceding remarks were in type, and ready for the press, I ascertained that the genuine C. *stellulata* was plentiful in the meadows about Downingtown, and probably in other parts of the County. The *Spikelets* are generally 4 in number, the *bract* at the lowest one often inconspicuous; *fruit* broadish-ovate, spreading, and finally somewhat reflexed. The whole plant is larger than the *var. scirpoides*, being from 12 to 18 inches high. In most other respects they closely resemble each other.

14. C. BROMOIDES, *Schk.* Spikelets 4 to 6, oblong, erect, the uppermost one pistillate at summit, the others either wholly pistillate, or androgynous with staminate glumes both above and below; fruit erect, lanceolate, acuminate, serrulate on the margin, longer than the lanceolate glume. *Beck, Bot. p.* 431. SPECIM. *Gray, Gram.* 2. *no.* 144. BROMUS-LIKE CAREX.

Culm 1 to 2 feet high, slender, often decumbent, triquetrous, scabrous above, leafy towards the base. *Leaves* narrow, linear, very acute, scabrous on the margin, at first longer, but at length shorter than the culm: *sheaths* smooth, membranaceous, whitish. *Spikelets* 2 to 6, usually about 4, the lower ones somewhat distant, the upper ones a little crowded; the terminal one mostly staminate below, the others generally androgynous with a few staminate glumes at each end; occasionally an entire staminate or pistillate spikelet occurs. At the base of the lowest spikelet is a lanceolate, glume-like *bract*, terminating in a scabrous awn. *Glumes* lance-ovate, slightly mucronate, scarious, a little shorter than the fruit. *Fruit* somewhat distichously and loosely arranged, obscurely triangular, nerved, with a tapering, bifid beak, serrulate on the margin.

Hab. Swamps; often cespitose, or in Tussocks; frequent. *Fl.* May. *Fr.* July.

Obs. This species, in its inflorescence, and general aspect, has more of a *grass-like* appearance than usually belongs to the Carex tribe.

B. Spikelets, some only Androgynous.

Terminal Spikelet only Androgynous. Stigmas 3.

15. C. virescens, *Muhl.* Spikelets mostly 3, oblong, erect; the uppermost one pedunculate, staminate below, the others pistillate, subsessile and bracteate; fruit somewhat trigonous-ovoid, obtuse, costate, roughly pubescent, rather longer than the ovate, mucronate glume. *Beck, Bot. p.* 436. Specim. *Gray, Gram.* 2. *no.* 157.

C. costata. *Schw. Tab. analyt. Caric. in Ann. Lyc. N. Y.* 1. *p.* 67. Greenish Carex.

Culm 1 to 2 feet high, rather slender, triquetrous, scabrous above, leafy. *Leaves* linear-lanceolate, tapering to a filiform point, erect, overtopping the culm, scabrous on the margin, striate and considerably pubescent; *sheaths* villous, those at and near the base of the culm often dark purple. *Spikelets* commonly 3, (occasionally 4, sometimes only 2,) about three fourths of an inch long, all approximate; the terminal one androgynous; the others entirely pistillate, nearly sessile, with each a lance-linear foliaceous *bract*, at base. *Staminate glumes* lance-ovate, acuminate. *Pistillate glumes* ovate, mucronate, whitish, generally a little shorter than the fruit. *Fruit* densely crowded, somewhat ovoid, mostly obtuse, flatted on the inner side, turgid on the outer, distinctly nerved or ribbed, deep green, coated with a short roughish pubescence. *Seed* triquetrous.

Hab. Borders of woodlands; Barrens, &c. frequent. *Fl.* May. *Fr.* July.

Obs. Our plant seems to be the *var. costata*, of Prof. *Dewey, Sill. Journ.* 9. *p.* 290.

16. C. hirsuta, *Willd.* Spikelets mostly 3, ovoid-oblong, erect, approximate; the uppermost one on a short peduncle, staminate below, the others subsessile, pistillate, bracteate; fruit roundish-ovoid, obtuse, nerved, smooth, scarcely longer than the ovate acuminate glume; leaves and sheaths strigosely pubescent. *Beck, Bot. p.* 436. Specim. *Gray, Gram.* 2. *no.* 158.

C. triceps? *Mx. Am.* 2. *p.* 170. Also? *Ell. Sk.* 2. *p.* 538.

Also? C. viridula. *Mx. l. c. Schw. & Torr. Monogr. p.* 320. Hairy Carex.

Culm 12 to 18 inches high, triquetrous, scabrous above, leafy. *Leaves* linear-lanceolate, about as long as the culm, the upper one often overtopping it, mostly hairy-pubescent; *sheaths* thickly clothed with strigose pubescence, lower ones dark purple. *Spikelets* 3, (rarely 4,) about half an inch long, the terminal one attenuate at base by the decurrent staminate glumes, thus giving it a pedunculate

appearance; the others on short peduncles, with each a lance-linear foliaceous *bract* at base. *Staminate glumes* lance-oblong, rather acute. *Pistillate glumes* ovate, abruptly acuminate, about as long as the fruit. *Fruit* somewhat crowded, obscurely triangular, obtuse, nerved, slightly pubescent when young, but glabrous at maturity, yellowish green. *Seed* triquetrous.

Hab. Moist meadows, and borders of woods: common. *Fl.* May. *Fr.* July.

Obs. This greatly resembles the preceding; but may be at once distinguished by its smooth fruit, shorter spikelets, and more obvious pubescence.

17. C. GRACILLIMA, *Schw.* Spikelets about 4, long-linear, slender, rather loose-flowered, distant, nodding, on filiform peduncles; the uppermost one staminate below, the others all pistillate; fruit oblong, subtriquetrous, obtuse, smooth, longer than the oblong mucronate glume. *Dew. Caric. in Sill. Journ.* 8. *p.* 98. Icon, *Vol.* 11. *tab.* 2. *f.* 28. (indifferent.) Specim. *Gray, Gram.* 2. *no.* 161.

C. digitalis. *Schw. & Torr. Monogr. p.* 324. Icon, *tab.* 27. *f.* 1. (good.) *Florul. Cestr. p.* 97. *Torr. Comp. p.* 340. *Beck, Bot. p.* 436. Not of *Willd. Pers. Pursh, Muhl. Ell.* nor *Eat.*

Very slender Carex.

Culm 18 inches to 2 feet high, slender but generally erect, triangular, somewhat scabrous above, striate, leafy. *Leaves* linear-lanceolate, scabrous on the margin, the upper ones equalling the culm, the lower ones abbreviated, with purple sheaths at the base of the culm. *Spikelets* generally 4 near the summit, (sometimes an additional lateral one,) slender and 1 near, often 2 inches long, nodding, on exserted filiform peduncles; about one-third of the terminal one pistillate above. *Staminate glumes* imbricated, ovate-oblong, rather obtuse, white with a green keel. *Pistillate glumes* about half as long as the fruit, oval, with a short abrupt point. *Fruit* smooth, slightly nerved, ovoid-oblong, somewhat triangular, with a very short, obtuse, rather oblique beak. *Seed* triquetrous.

Hab. Woodlands, and moist meadows: frequent. *Fl.* May. *Fr.* July.

Obs. Dr. *Gray*, with great probability, considers the C. *digitalis*, of *Willd, Muhl.* &c. with which this has been confounded, as a variety of C. *oligocarpa*.

18. C. Torreyana, *Dew.* Spikelets 4, oblong, linear, rather loose-flowered, pedunculate, somewhat nodding and distant; the uppermost one staminate below; fruit oboveid-oblong, obscurely triangular, rather acute at each end, about as long as the oblong aristate glume; leaves and sheaths pubescent. *Beck, Bot. p.* 436. Not of *Schw. Analyt. Tab.*

C. (anon.) *no.* 46. *Muhl. Gram. p.* 254.

C. aristata. *Dew. Caric. in Sill. Journ.* 7. *p.* 277. Icon, *Dew. l. c.* 9. *tab.* a. *f.* 1.

C. Davisii. *Schw. & Torr. Monogr. p.* 326. *Gray, Gram.* 2. Specim. *no.* 159. Not of *Dewey.*

Torrey's Carex.

Culm 1 to 2 feet high, triquetrous, slightly scabrous above, leafy. *Leaves* linear-lanceolate, flat, striate, scabrous on the margin, slightly pubescent, upper ones a little longer than the culm; *sheaths* pubescent. *Spikelets* commonly 4, about an inch or inch and half long, linear-oblong, loose-flowered, rachis somewhat flexuose; peduncles slender, a little exserted. *Staminate glumes* lanceolate, acuminate. *Pistillate glumes* lance-oblong, terminating in a scabrous awn, which often projects a little beyond the fruit. *Fruit* smoothish, nerved, somewhat inflated, with a short beak slightly bifid at the orifice. *Seed* triquetrous, puncticulate.

Hab. Low grounds along Brandywine: Pughtown: frequent. *Fl.* May. *Fr.* July.

Obs. First collected in Chester County in 1833, by D. Townsend, Esq.

C. Spikelets, Staminate and Pistillate distinct. Stigmas 3.

a. *Staminate Spikelet solitary.*

† *Pistillate spikelets subsessile, or the peduncles enclosed.*

19. C. pennsylvanica, *Lam.* Staminate spikelet erect, pedunculate or subsessile; pistillate spikelets mostly 2, subapproximate, ovoid or somewhat oblong, subsessile, few-flowered; fruit ovoid, obscurely triangular, beaked, subpedicellate, roughish tomentose, about as long as the oblong-ovate acuminate glume. *Rees, Cyclop. Art. Carex, no.* 83. Specim. *Gray, Gram.* 2. *no.* 162.

C. marginata. *Muhl. Beck, Bot. p.* 437. *and others.*

C. varia. *Florul. Cestr. p.* 97. Not of *Muhl. and others.*

Pennsylvanian Carex.

Root with numerous long fibres. *Culm* 4 to 12 inches high, slender, triquetrous, slightly scabrous, with a few short, narrow leaves, near the base. *Radical leaves* numerous, annotinous, linear, about as long as the culm. *Staminate spikelet* linear, erect, on a short peduncle, (from an eighth, to half an inch long,) inserted at the base of the upper pistillate spikelet; *glumes* oblong, rather obtuse, bright purplish brown. *Pistillate spikelets* 1 to 3, usually 2, ovoid, or sometimes rather oblong, 4 to 8-flowered, nearly sessile, distant from each other one third to half an inch, the lower one often with a linear or setaceous *bract* at base, longer than the spikelet; *glumes* oblong-ovate, acuminate, about as long as the fruit, at first pale green, finally reddish brown, white on the margin. *Fruit* globose-ovoid, 3-nerved or ribbed, so as to be subtriangular, beaked, slightly bifid at apex, and with an attenuated base about the size and length of the beak, covered with a short roughish pubescence.

Hab. Dry hilly woodlands: very common. *Fl.* April. *Fr.* June.

Obs. This I formerly took to be the C. *varia*, of authors; but, judging from the specimens in Dr. *Gray's* work, as well as from a specimen of C. varia, authenticated by Prof. *Dewey*, it seems that our plant is the C. *marginata*, of *Muhl.* &c. or the C. *pennsylvanica*, of *Lamarck*, and *Gray*. Dr. *Gray* makes the C. *varia*, of *Muhl.* a *variety* of the C. *pennsylvanica*, (viz. *var. Muhlenbergii,*) which variety I think I have not observed in Chester County. The characters of the two, however, as given in the books, seem to be a good deal blended and confused. The *var. Muhlenbergii*, of *Gray*, is nearly twice the size of our plant, every way stouter, with much broader and more lanceolate leaves, and pretty constantly with *three* fertile spikelets,—the lowest one, and sometimes the two lower ones, with a foliaceous bract at base.

20. C. pubescens, *Muhl.* Staminate spikelet subsessile; pistillate spikelets 3, oblong, erect, rather loose-flowered, the lowest one on a short peduncle; fruit triquetrous, beaked, pubescent, about as long as the ovate-oblong mucronate glume; leaves and culm pubescent. *Beck, Bot. p.* 437. Specim. *Gray, Gram.* 2. *no.* 164.

Pubescent Carex.

Culm 12 to 20 inches high, rather slender, erect or subdecumbent, triquetrous, striate, pubescent, leafy below. *Leaves* lanceolate, flat, shorter than the culm, and, with the *sheaths*, softly pubescent. *Staminate spikelet* rather short, nearly sessile; *glumes* lance-oblong, rather acute, sometimes a little mucronate. *Pistillate spikelets* mostly 3, the upper ones approximate, nearly sessile, with short lanceolate bracts, the lower one rather distant, on a short peduncle, with a foliaceous

bract nearly equalling the culm; *glumes* oblong or oval, mucronate, about as long as the fruit. *Fruit* densely pubescent, triquetrous, attenuated at base, acuminated into a small beak, with the orifice minutely bifid. *Seed* triquetrous, puncticulate

Hab. Woodlands; along Brandywine; frequent. *Fl.* May. *Fr.* June.

Obs. First observed, here, in 1830.

21. C. TENTACULATA, *Muhl.* Staminate spikelet bracteate, on a short peduncle; pistillate spikelets about 3, cylindric-oblong, approximate; bracts long, foliaceous; fruit densely crowded, ovoid, ventricose, nerved, long-beaked, about twice as long as the linear-oblong, awned glume. *Beck. Bot. p.* 438. SPECIM. *Gray, Gram. 2. no.* 170.

TENTACULATE, OR MANY-BEAKED CAREX.

The whole plant yellowish green. *Culm* 12 to 18 inches high, triquetrous, scabrous on the angles above, leafy. *Leaves* linear-lanceolate, nerved, scabrous on the margin, longer than the culm. *Staminate spikelet* with a filiform or lance-linear bract at base; *glumes* lance-linear, terminated by a long scabrous awn. *Pistillate spikelets* commonly 2 or 3, (rarely 4,) about an inch to an inch and half long, cylindric-oval or oblong, spreading somewhat horizontally, the upper ones approximate, sessile, the lowest one a little distant, on a short peduncle, scarcely exserted; *glumes* linear-oblong, with long setaceous scabrous awns; *Bracts* resembling the leaves, very long. *Fruit* ovoid inflated, spreading, smooth and shining, about 10? nerved, (5 nerved, *Schw. & Torr.*) attenuated into a long, straight, slender beak, which is slightly bifid at apex. *Seed* triquetrous, roughish puncticulate.

Hab. Swamps, and wet places: common. *Fl.* June. *Fr.* Aug.

Obs. The C. *rostrata*, of *Mx.* was referred to this by *Muhlenberg*, and others; but Dr. *Gray* alleges that Michaux's plant is the C. *xanthophysa*, of *Wahlenberg*, and the American Botanists,—and, moreover, that it is the true C. *folliculata*, of *Linn. See Annals of N. Y. Lyceum, Vol. 3. p.* 231.

22. C. LUPULINA, *Muhl.* Staminate spikelet bracteate, on a shortish peduncle; pistillate spikelets 3 to 5, ovoid-oblong, approximate; on short or included peduncles; bracts very long, foliaceous: fruit ovoid, inflated, nerved, long-beaked, about three times as long as the lance-ovate acuminate glume. *Beck, Bot. p.* 438. ICON, *Dew. Caric. in Sill. Journ.* 11. *tab.* L. *f.* 37. SPECIM. *Gray, Gram.* 2. *no.* 168.

HOP-LIKE CAREX.

Culm 2 to 3 feet high. stout, triquetrous, subscabrous above, leafy to the top *Leaves* much longer than the culm, lanceolate, broad, flat, striate, scabrous on the margin, with loose striate sheaths. *Staminate spikelet* usually solitary, (rarely with a smaller sessile one at the base, *Schw. & Torr.*) with a lance-linear bract on the peduncle longer than the spikelet; *glumes* lanceolate, tapering to a long scabrous acute point. *Pistillate spikelets* commonly 3 or 4, sometimes 2 or 5, nearly cylindric, about an inch and half long, and three fourths of an inch in diameter, on short or included peduncles, the lower ones longer and somewhat exserted; each with a long foliaceous bract, resembling the other leaves: *glumes* lance-ovate, acuminate, about one third the length of the fruit. *Fruit* oblong-ovoid, inflated, smooth, nerved, tapering to a long beak, which is bifid at apex. *Seed* triquetrous, puncticulate.

Hab. Low swampy grounds: common. *Fl.* June. *Fr.* August.

Obs. We have also the *var. pedunculata*, *Gray*, (in *Beck*,) with the pistillate spikelets all pedunculate; the lower long-pedunculate and distant, the 3 upper ones subumbellate.

23. C. INTUMESCENS, *Rudge.* Staminate spikelet pedunculate; pistillate spikelets 2, (sometimes solitary,) rather few-flowered, roundish, approximate, the upper one subsessile, the lower one on a short peduncle; bracts long, foliaceous; fruit inflated, conic-ovoid, acuminate, nerved, diverging, about twice as long as the lance-ovate acuminate glume. *Gray, in Ann. Lyc. N. Y.* 3. *p.* 235. SPECIM. *Ejusd. Gram.* 2. *no.* 172.

C. folliculata. *Mx. Am.* 2. *p.* 171. *Willd. Sp.* 4. *p.* 281. *Pers. Syn.* 2. *p.* 544. *Muhl. Catal. p.* 83. *Ejusd. Gram. p.* 243. *Pursh, Am.* 1. *p.* 42. *Nutt. Gen.* 2. *p.* 205. *Bart. Phil.* 2. *p.* 157. *Ell. Sk.* 2. *p.* 545. *Bigel. Bost. p.* 337. *Torr. & Schw. Monogr. p.* 338. *Dew. Caric. in Sill. Journ.* 10. *p.* 32. *Florul. Cestr. p.* 98. *Torr. Comp. p.* 343. *Beck, Bot. p.* 438. *Eat. Man. p.* 74. Not of *Linn.* according to *Gray, l. c.*

SWELLING CAREX.

Culm 1 to 2 feet high, rather slender, triquetrous, scabrous above, leafy. *Leaves* linear-lanceolate, broadish, nerved, generally scabrous. *Staminate spikelet* slender, on a long peduncle: *glumes* long-lanceolate. *Pistillate spikelets* usually 2, (sometimes 1, rarely 3,) four to twelve-flowered, nearly globose, and about three fourths of an inch in diameter, with long foliaceous *bracts* at base much surpassing the culm, the upper one nearly sessile, the lower one on a short exserted peduncle; (on the summit of each a few small staminate florets, *Ell.*) *Glumes* lance-ovate, cuspidate, about half as long as the fruit. *Fruit* large, ovoid, much inflated or ventricose, nerved, smooth, and often shining, tapering conically into a pretty long beak, which is bidentate at apex; upper ones diverging, lower ones a little reflexed. *Seed* triquetrous, acuminate, puncticulate-verrucose under a lens.

Hab. Low swampy grounds: frequent. *Fl.* June. *Fr.* August.

24. C. COLLINSII, *Nutt.* Staminate spikelet erect, on a short peduncle; pistillate spikelets about 4, distant, few-flowered, mostly staminate at summit; fruit subulate, reflexed or divaricate, about 3 times as long as the lanceolate glume. *Eat. Man. p.* 74. Also, *Dew. Caric. in Sill. Journ.* 11. *p.* 317.

C. subulata. *Mx. Am.* 2. *p.* 173. *Pursh, Am.* 1. *p.* 40. *Schw. and Torr. Monogr. p.* 340. ICON, *ejusd. oper. tab.* 26. *f.* 1. *Torr. Comp. p.* 343. *Beck, Bot. p.* 439. Also? *Nutt. Gen.* 2. *p.* 205. Not of *Wahlenberg.*

C. Michauxii. *Dew. l. c.* 10. *p.* 273. Not of *Schw. Analyt. Tab.* ICON, *Dew. l. c.* 10. *tab.* G. *f.* 21.

COLLINS' CAREX.

Culm 1 to 2 and sometimes 3 feet long, very slender, flaccid, leaning on other plants, obtusely triquetrous, smooth, leafy. *Leaves* lance-linear, flat, striate, scabrous, especially on the margin, (smooth, *Dew. Schw. & Torr.*) much shorter than the culm, (say 3 to 4 inches long.) *Staminate spikelet* terminal, small, on a short peduncle; *glumes* lanceolate, acute, or acuminate. *Pistillate spikelets* 3 to 5, usually 4, two to four or six-flowered; the upper one subsessile at the foot of the staminate spikelet, with a lanceolate, awned, scabrous *bract* at base, as long as the spikelet,—the others lateral, on enclosed peduncles, more or less exserted; mostly all of them bearing a few staminate florets at summit; the lower ones distant, 6 inches or more: *glumes* lanceolate, acute, about one third the length of the fruit. *Fruit* loosely, and somewhat distichously arranged, finally divaricate or reflexed,

subulate or long-lanceolate, slightly ventricose, smooth, indistinctly nerved, tapering to a long beak, orifice bicuspidate, with the slender points abruptly reflexed. *Seed* oblong, obtusely triangular.

Hab. Swamps, in the Mica Slate: Geo. Meredith's: rare. *Fl.* June. *Fr.* July.

Obs. Found by D. Townsend, Esq. in 1829. Our plant is much taller, and yet more slender, than the specimens which I have collected in New Jersey; constituting, I think, a pretty distinct *variety*. The Jersey specimens approach more, in habit, to the C. *xanthophysa*, *Wahl.* than ours.

†† *Pistillate Spikelets on exsert Peduncles, partly sheathed at base.*

25. C. anceps, *Muhl. in Willd.* Staminate spikelet pedunculate, linear-oblong, roundish; pistillate spikelets 2 or 3, distant, slender, loose-flowered, the lower ones pedunculate; fruit obtusely triangular-ovoid, striate, subpedicellate, or narrowed at base, a little longer than the ovate cuspidate glume. *Beck, Bot. p.* 439. Icon, *Dew. Caric. in Sill. Journ.* 11. *tab.* n. *f.* 47. Specim. *Gray, Gram.* 2. *no.* 176.
C. striatula? *Mx. Am.* 2. *p.* 173.
C. plantaginea. *Muhl. Catal. p.* 83. *Ejusd. Gram. p.* 245. Not of *Lam. Mx. and the other authors quoted in this work.*
Also, C. conoidea. *Florul. Cestr. p.* 78. *Muhl? Gram. p.* 248. Not of *Schk.*
Also? C. blanda. *Dew. Caric. l. c.* 10. *p.* 45.
Two-edged Carex.

Culm 9 to 18 inches high, acutely triangular, with the sides of unequal width, sometimes nearly ancipital above, rather smooth, leafy. *Leaves* variable in breadth; radical ones lanceolate, some of them nearly an inch wide and 4 to 9 or 12 inches long, scabrous on the margin, nerved, glaucous, living through the winter; those of the culm much narrower, with white membranaceous sheaths. *Staminate spikelet* with the peduncle compressed, originating from the bract of the upper pistillate one; *glumes* oblong, rather obtuse, often acute. *Pistillate spikelets* 2 to 5, more commonly 2, distant, about an inch long, loose-flowered, with a zig-zag or flexuose rachis; the upper one nearly sessile, the others on ancipital peduncles, supported by leaf-like bracts with short sheaths; *glumes* broad-ovate, obtuse, mucronate, a little shorter than the fruit. *Fruit* triangular-ovoid, or obovoid, attenuate at base, smooth, conspicuously striate, alternate and distant on the rachis, with a short and often oblique beak. *Seed* triquetrous, puncticulate, reddish brown, angles yellowish.

Hab. Rich, hilly woodlands: Bath, &c. frequent. *Fl.* April—May. *Fr.* July.

Obs. There seems to be some confusion between this and the C. *conoidea*, of *Muhl.* See *Gray*, and *Dewey*, *l. c.*

26. C. oligocarpa, *Schk.* Staminate spikelet pedunculate, rather short; pistillate spikelets about 3, pedunculate, few-flowered; lower peduncles elongated; fruit triquetrous, striate, smooth, with a very short oblique beak, longer than the ovate acute glume. *Beck, Bot. p.* 440. Specim. *Gray, Gram.* 2. *no.* 177.
C. van Vleckii. *Schw. analyt. Tab. in Ann. Lyc. N. Y.* 1. *p.* 60.
C. oligocarpa, *var.* van Vleckii. *Dew. Caric. in Sill. Journ.* 10. *p.* 281. Icon, *Dew. l. c. tab.* e. *f.* 20.
Few-fruited Carex.

Culm 6 to 12 inches high, slender, triquetrous, angles sharp and prominent, leafy, somewhat decumbent. *Leaves* lance-linear, thin and delicate, scabrous on the margin, upper ones surpassing the culm, lower ones abbreviated; sheaths short. *Staminate spikelet* on a short slender peduncle, from the bract of the upper pistillate; *glumes* ovate-lanceolate, with a green keel, the lower one large. *Pistillate spikelets* about 3, often only 2, distant, oblong, 5 to 9-flowered; upper one often subsessile, the lower ones on long, filiform, exsert peduncles; the lowest frequently sub-radical: *glumes* ovate, acute, about two-thirds the length of the fruit. *Fruit* triquetrous, striate, very loosely arranged on the rachis, with a short, oblique, obtuse beak (sometimes scarcely beaked). *Seed* triquetrous.

Hab. Hilly woodlands: West Chester: frequent. *Fl.* May. *Fr.* July.

Obs. The *var. latifolia, Gray*, with much larger, glaucous leaves, is also found here. Dr. *Gray* supposes it may be the C. *digitalis*, of *Muhl.* and *Willd.* In some of my specimens, the terminal spikelet is *androgynous*, with fruit at the summit.

27. C. SCABRATA, *Schw.* Staminate spikelet on a rigid scabrous peduncle; pistillate spikelets 4 or 5, somewhat distant, sub-cylindric, mostly erect, lower ones long-pedunculate; fruit oblong-ovoid, with an oblique beak, scabrous, rather longer than the ovate-lanceolate glume. *Beck, Bot. p.* 440. ICON, *Schw. & Torr. Monogr. tab.* 26. *f.* 2. SPECIM. *Gray, Gram.* 2. *no.* 179.

ROUGH CAREX.

Culm 1 to 2 feet high, acutely triquetrous, and scabrous above, somewhat ancipital below, striate, leafy. *Leaves* linear-lanceolate, broadish, nerved, scabrous, particularly on the margin and upper surface, about as long as the culm, the upper ones surpassing it. *Staminate spikelet* on a rigid, grooved, scabrous peduncle about three-fourths of an inch long; *glumes* lanceolate, lower ones somewhat distant, bract-like. *Pistillate spikelets* 3 to 5, often 4, rather densely fruited, the upper one nearly sessile, the others pedunculate, the lowest one remote and long-pedunculate, a little nodding; *glumes* ovate-lanceolate, scabrous at the points, shorter than the fruit: *bracts* foliaceous, the lower ones much surpassing the culm, sheaths short. *Fruit* ovoid, attenuate at base, subventricose, nerved, sides keeled or strongly ribbed, very scabrous, spreading when mature, so as to give the spikelet a squarrose appearance. *Seed* triquetrous, puncticulate. Plant dark green.

Hab. Shaded swamps: E. Darlington's meadow: not common. *Fl.* May. *Fr.* July.

28. C. LAXIFLORA, *Lam.* Staminate spikelet subsessile, slender; pistillate spikelets about 4, rather loose-flowered, the lower ones remote, pedunculate; fruit ovoid-oblong, rather obtuse, striate, glabrous, rather longer than the ovate cuspidate glume. *Beck, Bot. p.* 440. SPECIM. *Gray, Gram.* 2, *no.* 181.

LOOSE-FLOWERED CAREX.

Culm 12 to 18 inches high, triquetrous, smooth, leafy. *Leaves* lance-linear, flat, scabrous on the margin; the upper ones, or bracts, surpassing the culm; *sheaths* white and membranaceous opposite the leaves. *Staminate spikelet* short, subpedunculate, inconspicuous; *glumes* lanceolate, acute and mucronate, the lower ones long, bract-like, ciliate. *Pistillate spikelets* 3 or 4, (very often 4,) oblong, rather few-flowered, the two upper approximate, with the staminate one between them, the lower ones distant, the lowest one on a pretty long peduncle; *glumes* ovate, whitish or pale green, acuminate into a scabrous awn which projects beyond the fruit. *Fruit* ovoid-oblong, obscurely triangular, smooth and somewhat

shining, striate, inflated when mature, scarcely beaked, orifice minutely bidentate. *Seed* triquetrous, puncticulate. Plant glaucous.

Hab. Shaded swamps, and wet meadows: frequent. *Fl.* May. *Fr.* July.

29. C. GRANULARIS, *Muhl.* Staminate spike sessile, or short pedunculate; pistillate spikelets about 3, remote, cylindric, dense-flowered, the uppermost subsessile, the lowest on a long peduncle; fruit globose-ovoid, nerved, beak very short, recurved, orifice entire. *Beck, Bot. p.* 440. SPECIM. *Gray, Gram.* 2. *no.* 183.

GRANULAR, OR ROUND-FRUITED CAREX.

Culm 9 to 15 inches high, slender, triquetrous, smooth, leafy. *Leaves* linear-lanceolate, erect, rather glaucous, scabrous on the margin, lower ones shorter than the culm, upper ones, or *bracts*, surpassing the culm: *sheaths* white and membranaceous opposite the leaves. *Staminate spikelet* about three-fourths of an inch long, sometimes pedunculate, but usually closely sessile at the base of the upper pistillate spikelet; *glumes* lance-ovate, rather acute. *Pistillate spikelets* usually 3, often 4, cylindric and densely fruited; the uppermost sessile, (frequently, when there are 4, the two upper ones are approximate and sessile,) the next on an exsert peduncle, the lowest distant and long-pedunculate; *glumes* broad-ovate, acuminate, membranaceous, shorter than the fruit. *Fruit* roundish-ovoid, distinctly nerved, smooth, with a very short, somewhat gibbous and recurved beak. *Seed* triquetrous, puncticulate.

Hab. Wet meadows: Charlestown: not common. *Fl.* May. *Fr.* July.

Obs. Found in Charlestown township, by D. TOWNSEND, Esq. in 1829.

30. C. FLEXUOSA, *Muhl.* Staminate spikelet narrow-linear, on a short peduncle; pistillate spikelets about 4, slender, somewhat pendulous, on filiform peduncles; fruit alternate, rather distant on the rachis, oblong-lanceolate, acute at each end, smooth, about twice as long as the lanceolate glume. *Beck, Bot. p.* 441.

C. debilis, *Mx. Am.* 2. *p.* 172. Not of *Forster.*

FLEXUOSE CAREX.

Culm 1 to 2 feet high, slender, often procumbent in age, somewhat scaberous at summit and near the joints, leafy. *Leaves* lance-linear, narrow, scabrous on the margin, upper ones equalling the culm, lower ones shorter. *Sterile spikelet* very narrow, on a short filiform peduncle, rarely bearing a few pistillate florets at summit; *glumes* lanceolate, rather obtuse. *Pistillate spikelets* 3 to 5, an inch and a half to two inches long, usually 3 somewhat approximate near the summit, and 1 or 2 distant below, nodding on filiform exserted peduncles; *rachis* at length flexuose, and not entirely concealed by the fruit; *glumes* lanceolate, acute, or mucronate, membranaceous, about half as long as the fruit. *Fruit* subtriquetrous, oblong-lanceolate, acuminate, with a slender beak, bifid at apex, nerved, smooth, at first green, finally chesnut brown. *Seed* triquetrous, puncticulate.

Hab. Moist woodlands, and low grounds: frequent. *Fl.* June. *Fr.* Aug.

††† *Pistillate Spikelets on long Peduncles, nearly naked at base.*

31. C. MILIACEA, *Muhl.* Staminate spikelet pedunculate, subclavate, sometimes with fruit at summit; pistillate spikelets mostly 3, elongated, cylindric, slender, the uppermost one subsessile, the others nodding on filiform peduncles; fruit triquetrous, nerveless, smooth, short beaked, rather longer than the oval, obtuse or emarginate, mucronate glume. *Beck, Bot. p.* 441. SPECIM. *Gray, Gram.* 2. *no.* 186.

MILLET-LIKE CAREX.

Culm 15 inches to 2 feet high, slender, compressed-triquetrous, nearly smooth, or slightly scabrous at summit, leafy. *Leaves* lance-linear, rather narrow, flat, striate, scabrous on the margin, nearly as long as the culm. *Staminate spikelet* an inch or more in length, often enlarging towards the summit, and sometimes bearing pistillate florets; *glumes* oblong, loosely imbricate, acute or mucronate, keeled. *Pistillate spikelets* generally 3, (sometimes 2, and even 1,) somewhat approximate, cylindrical, slender and rather loose-flowered, nodding, peduncles filiform, upper ones short, lower ones longer; *glumes* shorter than the fruit, ovate, oval and obovate, obtuse or emarginate, mucronate. *Fruit* ovoid-lanceolate, triquetrous, without nerves on the sides, smooth, tapering to a short beak which is entire, spreading or somewhat recurved at maturity. *Seed* triquetrous, mucronate, minutely puncticulate.

Hab. Moist meadows, and low grounds: frequent. *Fl.* May. *Fr.* July.

Obs. I have specimens, pronounced by Prof. *Torrey* to be of this species, which constitute a pretty distinct *variety*, if not specifically distinct. The *Staminate glumes* are oblong and quite obtuse, or rounded at the end: the *pistillate glumes* are narrow, linear oblong, and rather obtuse, with green keel and dark brown sides; *Fruit* somewhat triquetrous, or rather plano-convex and keeled on the back, with the beak squarrosely spreading, or recurved. In other respects this plant agrees pretty well with C. miliacea. *Hab.* E. Darlington's meadow.

32. C. HYSTERICINA, *Willd.* Staminate spikelet pedunculate, bracteate; pistillate spikelets about 3, somewhat distant, cylindric-oblong, dense-fruited, nodding, the upper one on a short peduncle, the others on slender exsert peduncles; fruit ovoid, inflated, long-beaked, somewhat horizontal, twice as long as the oblong emarginate awned glume. *Beck, Bot. p.* 441. SPREIM. *Gray, Gram.* 2. *no.* 188.
PORCUPINE-LIKE CAREX.

Culm 18 inches to 2 feet high, triquetrous, scabrous above, leafy. *Leaves* linear-lanceolate, scabrous; the upper ones, or *bracts*, surpassing the culm, with short sheaths. *Staminate spikelet* on a peduncle 1 to 2 or 3 inches long, with a subulate-linear bract at base; *glumes* lance-oblong, mucronate, pale brown, with a green keel. *Pistillate spikelets* 2 to 4, generally 3, rather distant, an inch or inch and half long, cylindric, nodding, the upper one nearly sessile, the others pedunculate, the lowest on a slender exsert peduncle 2 to 4 inches long; *glumes* scarcely half as long as the fruit, oblong, emarginate, ending in a scabrous awn. *Fruit* ovoid-oblong, obscurely triangular, glabrous, nerved or striate, terminated by a long, rather slender beak, bifid at apex, finally spreading almost horizontally *Seed* triquetrous, striately puncticulate, appearing somewhat scabrous, (angles smooth, *Schw. & Torr.*) terminated by the long, flexuose, cartilaginous, porsistent style.

Hab. Wet meadows: W. Chester, Downingtown: frequent. *Fl.* May. *Fr.* July.

Obs. This species grows with C. *tentaculata*, and greatly resembles it; but the pedunculate, nodding spikelets, at once serve to distinguish it.

b. *Staminate spikelets two or more.* † *Stigmas* 2.

33. C. CRINITA, *Lam.* Staminate spikelets mostly two, long and slender, cernuous, sometimes androgynous; pistillate spikelets about 4, somewhat distant, long, cylindric, dense-flowered, pendulous, often staminate at the end; fruit ovoid, subtriquetrous, ventricose, short-beaked, smooth, about half or one third as long as the lance-linear ciliate-

serrulate glume. *Beck, Bot. p.* 442. Specim. *Gray, Gram.* 2. *no.* 193.

Haired, or chaffy Carex.

Culm 2 to 4 feet high, acutely triquetrous, striate, scabrous on the angles, leafy below. *Leaves* linear-lanceolate, striate, scabrous on the margin, lower ones shorter than the culm, sheaths loose and striate, upper ones, or *bracts*, surpassing the culm, without sheaths. *Staminate spikelets* mostly 2, long and linear, one pedunculate, the other nearly sessile, sometimes bearing fruit at summit; *glumes* linear, with a membranaceous margin, terminating in a ciliate awn. *Pistillate spikelets* usually 4, two to 3 inches long, nearly cylindric, often attenuate at base, and staminate at summit, pendulous, on shortish peduncles, the lower ones gradually longer; *glumes* lance-linear, ending in a long, spreading, hispid or ciliate serrulate point, twice or three times as long as the fruit. *Fruit* ventricose, broadish ovoid, sometimes ovoid-oblong, subtriangular, nerved, with a prominent rib or keel on each side, smooth; beak short, entire. *Seed* compressed, obovate, acuminate.

Hab. Swampy margins of rivulets: common. *Fl.* May. *Fr.* July.

Obs. A somewhat variable species. Sometimes the fruit is shortish and broad-ovoid, or obovoid,—at others ovoid-oblong, or lanceolate, and more than half as long as the glumes.

34. C. acuta, *L.* Staminate spikelets 1 to 3, erect; pistillate spikelets about 3, rather distant, cylindric, subsessile, often staminate at summit; fruit compressed, ovate, acute, orifice entire, about as long as the lanceolate glume. *Beck, Bot. p.* 442.

Acute, or Sharp Carex.

Culm 1 to 2 feet high, deeply striate, triquetrous, very acute and scabrous on the angles, leafy at base. *Leaves* linear, keeled, scabrous on the margin, often longer than the culm, radical ones very numerous; *sheaths* striate, sometimes filamentous. *Staminate spikelets* 2 or 3, (often solitary,) erect, of variable lengths, sessile, except the uppermost one; *glumes* oblong, mostly obtuse. *Pistillate spikelets* mostly 3, the lowest on a very short peduncle, upper ones sessile, often staminate at summit; *glumes* lance-oblong, rather obtuse, sometimes acute, dark brown on the sides with green keel, about as long as the fruit. *Fruit* compressed, ovate, elliptic, or obovate, smooth, nerveless or indistinctly nerved on the back, acute, with a very short, entire beak. *Seed* compressed, obovate, mucronate, puncticulate.

Hab. Swamps, forming large tufts, or tussocks: common. *Fl.* April. *Fr.* June.

†† *Stigmas* 3.

35. C. pellita, *Muhl.* Staminate spikelets about 2; pistillate spikelets 2 or 3, cylindric-oblong, erect, rather distant, upper one sessile; fruit hispid, pubescent, triquetrous-ovoid, with a short bicuspidate beak, about as long as the lance-ovate awned glume. *Beck, Bot. p.* 444. Specim. *Gray, Gram.* 2. *no.* 195.

C. striata. *Mx. Am.* 2. *p.* 174.

Furred Carex.

Culm 18 inches to 2 feet high, triquetrous and scabrous above, smooth below, striate, leafy. *Leaves* rather narrow, lance-linear, nearly flat, erect, long-acuminate, slightly scabrous on the margin, about as long as the culm. *Staminate spikelets* 2 or 3, (sometimes 1,) upper one pedunculate; *glumes* ovate, acute. *Pistillate*

spikelets 2 or 3, cylindric or ovoid-oblong, dense-fruited, erect, the upper one sessile or subsessile, the lowest on a short peduncle, (sometimes rather elongated,); *glumes* ovate or lanceolate, cuspidate, often longer than the fruit: *bracts* foliaceous, scabrous, surpassing the culm. *Fruit* ovoid, ventricose, obscurely triangular, striate, densely pubescent, with a short beak bicuspidate at apex. *Seed* triquetrous-turbinate, punctiulate.

Hab. Moist grounds: Serpentine ridge: Valley: not common. *Fl.* May. *Fr.* July.

Obs. Found by D. Townsend, Esq. in 1829. Some of the specimens collected by Mr. Townsend, have the pistillate spikelets with *staminate florets* at summit, and the glumes comparatively *short-mucronate*. Nearly one hundred additional species have been described as natives of the U. States, but the foregoing are all that have been ascertained in Chester County;—though I doubt not a number remain yet to be detected within its limits. The Carices, and indeed all the plants in the Natural Order *Cyperaceæ*, here enumerated, are of very little known value, in domestic or rural economy; and a large portion of them, by their prevalence, merely serve to indicate the neglected or unimproved lands of slovenly Agriculturists. The following Order, on the contrary,—although somewhat allied to the Cyperaceæ,—embraces a great number of plants of the most interesting charactor, and of inestimable value to Man.

[Spartina cynosuroides. Cenchrus tribuloides. *Triandria Digynia.*]

[Galium trifidum. *Tetrandria Monogynia.*]

[Juncus effusus. J. marginatus. J. acuminatus, and J. polycephalus. *Hexandria Monogynia.*]

[Acer eriocarpum. *Octandria Monogynia.*]

Order 2. Digynia.

GRASSES.* *Nat. Ord.* 261. *Lindl.* Gramineæ.

* The Plants of this Order consist of what are called the *true Grasses*; a remarkably natural groupe, with herbaceous, jointed or nodose stems, called *Culms*, which are for the most part cylindrical, and fistular between the nodes; *Leaves* alternate, one originating at each node, always entire, and generally linear, with parallel nerves,—the bases, or what may be considered as the petioles of the leaves, sheathing the culm, but uniformly slit on one side down to their origin,—and frequently with a whitish, projecting membrane (called a *Ligule*) at the top of the sheath. The *Flowers* are usually Perfect or Monoclinous,—sometimes Polygamous, occasionally Monoicous,—disposed in little clusters, called *Spikelets*; and these, again, are arranged in Panicles, Racemes, or Spikes,—which, on their first appearance, protrude from the sheaths of the leaves as from a spathe. Each perfect or fertile *Floret* produces a single *Seed*. The *floral coverings* are *glumaceous*, or chaffy, and more or less distichously imbricated. The outer, or lower ones, (which are empty—being in fact a sort of involucre—consisting mostly of 2, rarely of 1, or 3, pieces, called *valves*,) have been considered as equivalent to the *calyx* of other plants; and those immediately enclosing the stamens have been called *corolla*: but they are *all* now regarded more properly as *Bracts*. The small *Scales* (Nectary, *Linn.*) generally to be found at the base of the ovary, may perhaps be deemed the rudiments of a true Perianth. With a view, therefore, to a convenient distinction between the floral envelopes of the Grasses, I shall adopt the language of *Palisot de Beauvois*,—which has been sanctioned by the respectable authority of *Lindley* and *Beck*,—calling the exterior or lower bracts, *Glumes*, and those which immediately invest the flower, *Palea*.

Div. I. Paniceæ—*Panic-grass Tribe.*

Inflorescence *Spiked, or Panicled.* Spikelets 1, *or more usually, 2-flowered, with one of the Florets imperfect, or abortive.* Glumes *generally membranaceous, sometimes awned.* Paleæ *more or less cartilaginous; the lower palea half enfolding the upper one; mostly awnless.*

† *Spikelets 1-flowered: Flowers all perfect.*

25. PASPALUM. *L. Nutt. Gen.* 84.

[Greek, *Paspalos*, Millet; from the resemblance of its seeds.]

Flowers in unilateral Spikes. *Glumes* 2-valved, membranaceous, equal, nearly orbicular, closely pressed to the two plano-convex *paleæ*. *Stigmas* plumose, colored. *Seed* coated with the smooth cartilaginous paleæ.

1. P. setaceum, *Mx.* Culm slender, a little pilose above; leaves and sheaths pilose; spike mostly solitary; flowers in two rows. *Beck, Bot. p.* 399.
P. pubescens. *Muhl. Catal. p.* 8. *Ejusd. Gram. p.* 92. *Florul. Cestr. p.* 11.
P. ciliatifolium. *Gray, Gram.* Specim. *no.* 24. Also? *Torr. Fl.* 1. *p.* 75. *Eat. Man. p.* 251. Not of *Mx. Muhl.* and *Ell.*
Also? P. debile. *Mx. Am. p.* 44. *Pursh, Am.* 1. *p.* 70. *Muhl. Catal. p.* 8. *Ejusd. Gram. p.* 91. *Nutt. Gen.* 1. *p.* 57. *Ell. Sk.* 1. *p.* 105. *Eat. Man. p.* 251.
Setaceous, or slender Paspalum.

Root perennial. *Culm* erect, 1 to 2 feet high, smooth and purplish below, somewhat pilose and very slender above; nodes glabrous, purple. *Leaves* narrowish lanceolate, rather short, mostly very hairy on both sides; *sheaths* nerved, smooth, pilose at throat and on the margin. *Spike* solitary, on a very long terminal peduncle; often with another on a short peduncle, proceeding from the same sheath. *Rachis* convex on the back, pilose at base. *Florets* plano-convex, alternate, somewhat in two rows, with the flat side out; *pedicels* short, bifid, or with each a little bract-like process at base resembling an abortive floret. *Glumes* roundish ovate, smooth. *Paleæ* of the same form as the glumes, cartilaginous, very smooth and shining, the lower one embracing the upper. *Seed* plano-convex.

Hab. Sandy fields, and road sides; frequent. *Fl.* Aug. *Fr.* September.

Obs. I think Dr. *Gray* is mistaken, in making this synonymous with P. *ciliatifolium*, of *Mx.* and *Ell.* I have specimens of the latter, received from Mr. *Elliott* himself; and they are apparently quite distinct from our plant.

2. P. læve, *Mx.* Culm rather stout, smooth; leaves generally smooth, pilose at base; spikes 2 to 6, alternate; flowers in two rows. *Beck, Bot. p.* 399. Specim. *Gray, Gram.* 1. *no.* 25.
Also, P. præcox. *Mx. Am.* 1. *p.* 44. *Ell. Sk.* 1. *p.* 106. according to *Gray, l. c.*
Smooth Paspalum.

Root perennial. *Culm* erect, 18 inches, to 3 feet high. *Leaves* broad-linear, often long, generally smooth, pilose at base, just above the ligule; lower sheaths sometimes pilose. *Spikes* 2 to 6, with a few long white hairs at base. *Rachis* flex-

nose, flat on the back, marginate. *Pedicels* undivided, 1-flowered. *Florets* plano-convex, alternate, in two rows, larger than the preceding. *Glumes* orbicular-ovate, 1-nerved, minutely striate.

Hab. Grassy banks: Brandywine, &c. frequent. *Fl.* August. *Fr.* September.

Obs. Sometimes the whole plant is quite smooth; in other instances, the leaves are somewhat pilose, and the lower sheaths conspicuously so. There are 8 or 9 additional species enumerated in the U. States.

†† *Spikelets 2-flowered; one of them abortive.*

26. DIGITARIA. *Haller. Nutt. Gen.* 82.
[Latin, *Digitus*, a finger; the spikes being digitate, or finger-like.]

Spikes linear, digitate or fasciculate; *spikelets* unilateral, in pairs, on short bifid pedicels. *Glumes* mostly 2-valved; the lower one very small, sometimes wanting. *Lower floret* abortive; *palea* single, membranaceous. *Upper floret* perfect; *paleæ* 2, subcartilaginous, lance-oblong, nearly equal. *Seed* striate.

1. D. SANGUINALIS, *Scop.* Spikes numerous, fascicled, a little spreading; leaves lanceolate; spikelets in pairs; florets lance-oblong, slightly ciliate-pubescent on the margin. *Beck, Bot. p.* 398.
Panicum sanguinale. *Willd. Sp.* 1. *p.* 342. *Ait. Kew.* 1. *p.* 142. *Bigel. Bost. p.* 41.
BLOODY, OR PURPLE DIGITARIA. *Vulgò*—Crab-grass. Finger-grass.

Root annual. *Culm* decumbent, 12 to 18 inches long, geniculate, glabrous, radicating at the lower joints. *Leaves* softly pilose; sheaths strigosely hairy: *ligule* short, ovate, white, often tinged with purple. *Spikes* 4 to 6, sometimes 8 or 9, often in 2 fascicles a little distant, becoming purple: *rachis* flat, flexuose, scabrous on the margin. *Spikelets* in pairs, in two rows, appressed to the rachis, on short pedicels, the lower one subsessile. Inferior *glume* almost wanting.

Hab. Gardens, and cultivated grounds: common. *Fl.* July. *Fr.* September.

Obs. This is a well known, troublesome grass to Gardeners; and very difficult to keep in subjection, in the latter part of summer.

2. D. FILIFORMIS, *Ell.* Spikes 2 to 4, erect, alternate, filiform; spikelets mostly in threes, all pedicellate; glume 1-valved, as long as the abortive floret, pubescent. *Beck. Bot. p.* 398. SPECIM. *Gray, Gram.* 1. *no.* 23.
D. pilosa? *Mx. Am.* 1. *p.* 45. *Pursh, Am.* 1. *p.* 69.
Panicum filiforme. *Willd. Sp.* 1. *p.* 343. *Ait. Kew.* 1. *p.* 142.
FILIFORM DIGITARIA.

Root annual. *Culm* erect, very slender, 1 to 2 feet high. *Leaves* short, narrow-lanceolate, slightly hairy, scabrous on the margin; lower sheaths very hairy, upper ones glabrous. *Spikes* mostly 2, (sometimes 1, 3, or 4,) filiform; *rachis* flexuose, scabrous. *Spikelets* in twos or threes, on pedicels of different lengths, divided to the base. *Glume* acute, 3-nerved, pubescent. *Palea* of the *abortive floret* 5-nerved, pubescent, as long as the perfect floret.

Hab. Dry sandy banks, and road sides: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. Two or three other species are known in the United States; of which the D. *glabra* may probably be found in Chester County; but it has not yet been observed.

27. PANICUM. *L. Nutt. Gen.* 79.

[Latin, *Panicula*, a mode of flowering; or *Panis*, bread—which some species afford.]

Glumes 2-valved, unequal, the lower one mostly very small. *Florets* dissimilar; the *lower one* abortive, or staminate, with 1 or 2 *paleæ*; the lower palea resembling in texture the glumes, the upper one membranaceous. *Perfect floret* with the *paleæ* cartilaginous, equal, concave, persistent, embracing the seed.

* *Spikelets in loose Panicles.*

1. P. VIRGATUM, *L.* Whole plant glabrous; panicle diffuse, very large; flowers acuminate; paleæ of the abortive floret nearly equal. *Beck, Bot. p.* 396. SPECIM. *Gray, Gram.* 1. *no.* 31.
VIRGATE, OR LONG-PANICLED PANICUM.

Root perennial. *Culm* 3 to 5 feet high. *Leaves* long, linear-lanceolate, pilose at base, above the ligule; *sheaths* striate; *ligule* fringed with long white hairs. *Panicle* virgate, at length spreading. *Spikelets* rather large; *florets* a little diverging. *Glumes* acuminate; the lower one nearly three fourths the length of the upper, and resembling it in structure. *Abortive floret* staminate, the upper palea membranaceous and white, enfolding the purple stamens. *Perfect floret* lanceolate, smooth. Whole plant often purple.

Hab. Brandywine, at Wistar's Bridge: Schuylkill: not common. *Fl.* Aug. *Fr.* Sept.

Obs. Found by D. TOWNSEND, Esq. in 1829. A stout, firm grass; but, like the rest of our Panicums, of little value to the Agriculturist.

2. P. CAPILLARE, *L.* Culm nearly simple; sheaths very hirsute; panicle large, capillary, loose, expanding; spikelets lanceolate, acuminate, smooth, on long hispid peduncles; abortive floret of 1 palea. *Beck. Bot. p.* 397.
P. strigosum? *Ell. Sk.* 1. *p.* 126.
CAPILLARY PANICUM.

Root annual. *Culm* assurgent, and erect, 1 to 2 feet high, sometimes branched. *Leaves* broad, lanceolate, acuminate, nerved, hairy: *sheaths* covered with hispid hairs; *ligule* beard-like. *Panicle* large and pyramidal; branches numerous, very slender, straight, spreading, at length divaricate. *Spikelets* often purple, small, acuminate. *Glumes* unequal; lower one broad-ovate, acute, keeled, upper one lanceolate, acuminate, nerved. *Abortive floret* without a superior palea. *Perfect floret* much shorter than the upper glume, lance-oblong, plano-convex, smooth and shining.

Hab. Sandy grounds; Indian cornfields, pastures, &c. common. *Fl.* Aug. *Fr.* Sept.

Obs. In the fall of the year, the dry culms of this grass break off, and the divaricate panicles are rolled over the fields, by the winds, until they accumulate in great quantities, along the fences and hedges.

3. P. RECTUM, *Roem. & Schult.* Culm cespitose, mostly simple, hairy at the joints; leaves lance-linear, very acute, erect, upper ones elongated; panicle rather few-flowered, with erect, flexuose branches; spikelets alternate, pedunculate, ovoid or obovoid, large and somewhat turgid. *Beck, Bot. p.* 396. SPECIM. *Gray, Gram.* 1. *no.* 29.
P. strictum. *Pursh, Am.* 1. *p.* 69. *Bart. Phil.* 1. *p.* 50.

P. depauperatum. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 112. *Florul. Cestr. p.* 16. Also, *Torr. Fl.* 1. *p.* 144. *Beck, Bot. p.* 395. *Eat. Man. p.* 247.

Also, P. involutum. *Torr. Fl.* 1. *p.* 144. *Beck, Bot. p.* 395. *Eat. Man. p.* 247.

STRAIGHT, OR UPRIGHT PANICUM.

Root perennial. *Culm* 9 to 15 inches high, erect, cespitose, mostly simple, scabrous, with the joints pilose. *Leaves* lance-linear, erect, involute at the end, so as to form a long, slender, pungent point, scabrous and somewhat pilose, or occasionally glabrous; lower ones abbreviated, upper ones longer, the terminal one generally overtopping the panicle: sheaths scabrous, pubescent with long hairs. *Panicle* terminal, erect, branches tortuous, somewhat in pairs, one of them longer and bearing 2 spikelets. *Spikelets* rather large, (nearly as large as those of P. *latifolium*,) all pedunculate: *glumes* smooth, nerved, lower one short, broad-ovate, rather obtuse. Upper *palea* of the *abortive floret* about half as long as the lower one. *Perfect floret* a little shorter than the upper glume, ovoid or obovoid; the *palcæ* hard and polished

Hab. Sterile hills; Serpentine ridge, abundant. *Fl.* May. *Fr.* July.

Obs. This species is pretty much confined to the Serpentine rock, or Mica Slate hills, where it grows abundantly. The sheaths are generally very pilose with long hairs; but in some situations the whole plant is nearly glabrous.

4. P. DICHOTOMUM, *L.* Culm much branched and dichotomous above; branches fasciculate; leaves numerous, short, linear-lanceolate; panicles terminal and lateral, simple, capillary; spikelets small. *Beck, Bot. p.* 395.

P. ramulosum? *Mx. Am.* 1. *p.* 50. Also? *Pers. Syn.* 1. *p.* 84.

FORKED, OR BRANCHING PANICUM.

Root perennial. *Culm* erect, or decumbent, 1 to 2 feet long, dichotomously branched, smooth; lower *nodes* pubescent, upper ones glabrous. *Leaves* numerous on the fascicled branches, spreading, 1 to 2 inches long, narrow, smooth, bright green; those at the base of the culm ovate-lanceolate, somewhat cordate, with pilose sheaths; *sheaths* of the culm-leaves smooth, hairy at throat, and ciliate on the margin: *ligule* bearded. *Panicles* lateral and terminal; those of the branches mostly few-flowered, short and simple,—with one or two terminal ones on long slender footstalks, much surpassing the branches. *Spikelets* small, ovoid or elliptic; *glumes* mostly pubescent, (sometimes smooth,) nerved, the lower one short, rather obtuse. Upper *palea* of the *abortive floret* minute. *Perfect floret* as long as the upper glume; the *palcæ* smooth and shining.

Hab. Dry, hilly woodlands: Serpentine ridge, abundant. *Fl.* July. *Fr.* Sept.

Obs. This species presents several varieties. It is generally smooth; but in some instances, remarkably pilose, with rigid, upright, cuspidate leaves. The *var.* b. *fasciculatum, Torr.*—with bushy or leafy fasciculate branches, and small simple panicles nearly concealed among the leaves,—is frequent in the thickets on Serpentine ridge. The *glumes*, in this variety, are often smooth; but in the others I have found them quite pubescent.

5. P. NITIDUM, *Lam.* Culm erect, simple, slender; sheaths bearded at throat; leaves few, distant, linear-lanceolate; panicle capillary, rather crowded, compound; spikelets small, oblong-ovoid, obtuse, slightly pubescent; lower glume minute. *Beck, Bot. p.* 395.

SHINING PANICUM.

Root perennial? *Culm* 1 to 2 feet high, generally simple, erect, slender; *nodes* mostly surrounded by a retrorsely villous ring. *Leaves* linear-lanceolate, rather short, smooth; radical ones ovate-lanceolate: *sheaths* bearded at throat, and pilose along the margin; upper ones smooth, lower ones pubescent. *Panicle* terminal, smooth: branches often numerous, somewhat verticillate. *Spikelets* at the extremities of the branches, oblong-ovoid, slightly pubescent. Lower *glume* minute, upper one obscurely 5-nerved. *Abortive floret* neutral; upper *palea* about half as long as the lower. *Perfect floret* a little longer than the upper glume, smooth and shining; the lower *palea* somewhat keeled.

Hab. Dry woodlands; old fields, &c. common. *Fl.* June. *Fr.* Aug.

Obs. This appears to embrace numerous *varieties*, which are not easily reduced to any satisfactory arrangement. I derived but little aid from consulting *Muhlenberg's* Herbarium. Some of the varieties are generally *smooth*, and others quite *villous*. Sometimes all the nodes have a retrorsely villous ring—and in some instances they are nearly glabrous.

6. P. MICROCARPON, *Muhl.* Culm simple, erect; sheaths smooth, striate, pilose on the margin; leaves lanceolate, nerved, ciliate at base, margins scabrous; panicle erect, much branched, smooth; spikelets small, ovoid or obovoid, nearly smooth. *Muhl. Gram. p.* 111.

SMALL-FRUITED PANICUM.

Root perennial. *Culm* 18 to 30 inches high, erect, simple, smooth; *nodes* glabrous. *Leaves* lanceolate, acuminate, nerved, somewhat scabrous above, smooth beneath, undulate and scabrous on the margin, ciliate at base; radical leaves ovate, acute: *sheaths* smooth, deeply striate, sparingly pilose or ciliate on the margin: *ligule* none. *Panicle* erect, much branched, rather large, somewhat pyramidal; branches flexuose, nearly smooth. *Spikelets* numerous, at the ends of the branches, small, scarcely pubescent. Lower *glume* very small, ovate, obtuse, generally purple: upper one obovate, obtuse. *Abortive floret* neutral; upper *palea* about 2 thirds the length of the lower. *Perfect floret* as long as the upper glume, smooth and shining, bluish white.

Hab. Woodlands, and low grounds: frequent. *Fl.* July. *Fr.* Aug.

Obs. This has hitherto been considered, here, as one of the many varieties of P. *nitidum*,—though it is considerably larger, with broad-lanceolate leaves, often nearly an inch wide. It agrees so nearly with Dr. *Muhlenberg's* description, that I believe it is his plant.

7. P. LATIFOLIUM, *L.* Culm generally simple, with the nodes retrorsely pilose; leaves ovate-lanceolate, smoothish, or, with the sheaths, somewhat pubescent; panicle terminal, a little exserted, simple, pubescent; spikelets oblong-ovoid; abortive floret staminate, the upper palea acute, nearly as long as the lower one. *Beck, Bot. p.* 394. SPECIM. *Gray, Gram.* 2. *no.* 109.

BROAD-LEAVED PANICUM.

Root perennial. *Culm* 1 to 2 feet high, mostly simple. *Leaves* ovate-lanceolate, 3 or 4 inches long and about 1 inch wide, subcordate and clasping at base, spreading, generally smooth, sometimes ciliate: *sheaths* about half as long as the internodes, ciliate along the margin, often pubescent. *Panicle* simple, rather few-flowered; branches pubescent. *Spikelets* rather large, pubescent: lower *glume* ovate, loose, upper one strongly nerved. *Abortive floret* with 3 perfect stamens. *Perfect floret* lanceolate, acute.

Hab. Shaded ditch banks; woods and thickets: common. *Fl.* June. *Fr.* Aug.

Obs This plant is sometimes nearly smooth; but often the leaves and sheaths are quite pubescent. One of the specimens in my copy of Dr. *Gray's* work has the *nodes* smooth. There is, apparently, an *autumnal variety* of this species, with narrow-lanceolate, erect, crowded leaves at summit, and blended with small depauperated panicles, giving it something of the habit of P. *dichotomum*.

8. P. CLANDESTINUM, *L.* Culm with short axillary branches, nodes smooth; leaves broad-lanceolate, subcordate at base, often ciliate; sheaths hispid, enclosing the short lateral panicles; abortive floret neutral, the upper palea obtuse, about 2 thirds the length of the lower one. *Beck, Bot. p.* 394. SPECIM. *Gray, Gram.* 1. *no.* 27.
P. latifolium, *var.* clandestinum. *Pursh. Am.* 1. *p.* 68. *Bart. Phil.* 1. *p.* 49.
CLANDESTINE, OR HIDDEN-FLOWERED PANICUM.

Root perennial. *Culm* 2 to 3 feet high, rigid, leafy, nodes smooth; branches appressed. *Leaves* 3 to 6 inches long, ovate-lanceolate, strongly nerved, ciliate at base: *sheaths* deeply striate, hispid with horizontal hairs arising from *papillæ* in the grooves. *Panicles* terminal and lateral; the latter concealed in the sheaths of the leaves, simple, few-flowered. *Spikelets* oblong-ovoid, rather obtuse, pubescent: lower *glume* ovate, acute, the upper one oval, 7-nerved. *Perfect floret* about as long as the upper glume, smooth and shining.

Hab. Moist grounds, meadows and thickets: frequent; *Fl.* July. *Fr.* Sept.

Obs. Resembles P. *latifolium*; but may be distinguished by the characters here given. I have specimens, with smooth nodes, which seem to be intermediate between P. *clandestinum* and P. *latifolium*; and which I was inclined to think might be P. *nervosum, Muhl.* But they do not quite agree with the description.

* * *Spikelets in racemose Panicles.*

9. P. AGROSTOIDES, *Muhl.* Culm compressed, glabrous; leaves very long; panicles terminal and lateral, pyramidal; branches bearing racemes; spikelets appressed, small, lanceolate, acute; abortive floret neutral, with the paleæ nearly equal. *Beck, Bot. p.* 396. SPECIM. *Gray, Gram.* 1. *no.* 32.
P. elongatum. *Pursh, Am.* 1. *p.* 69.
P. fusco-rubens? *Nutt. Gen.* 1. *p.* 53. Also? *Eat. Man. p.* 249.
AGROSTIS-LIKE PANICUM.

Root perennial. *Culm* 2 to 3 feet high, smooth at the joints. *Leaves* forming a large tuft about the root; those of the culm about a foot long, lance-linear, keeled, scabrous on the margin; *sheaths* shorter than the internodes, striate, glabrous; *ligule* very short, truncate. *Panicles* mostly dark purple, terminal and lateral; the latter on long compressed peduncles; branches slightly flexuose, at length horizontal. *Spikelets* in somewhat secund racemes, crowded, on short pedicels, acute, smooth, often with very slender setaceous bracts at base: lower *glume* about half the length of the upper, very acute, keeled; upper glume rather longer than the abortive floret, acuminate, with 5 prominent nerves. Upper *palea* of the *abortive floret* acute, 1-nerved. *Perfect floret* nearly a third shorter than the upper glume, smooth and shining.

Hab. Moist meadows: borders of swamps: frequent. *Fl.* July. *Fr.* Sept.

10. P. ANCEPS, *Mx.* Culm compressed; sheaths ancipital, pilose near the throat, and on the margin; panicle erect, oblong, somewhat contracted, with nearly simple branches; spikelets interruptedly racemose,

acuminate ; abortive floret neutral, with the upper palea oblong, obtuse or emarginate. *Beck, Bot. p.* 396. Specim ? *Gray, Gram.* 1. *no.* 33. P. rostratum. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 121. *Bart. Phil.* 1. *p.* 48 *Florul. Cestr. p.* 16.

Two-edged Panicum.

Root perennial. *Culm* 2 to 4 feet high, compressed, glabrous, somewhat geniculate at base. *Leaves* linear, lanceolate, keeled, pilose on the upper surface, slightly scabrous on the margin : *sheaths* about half as long as the internodes, (longer, *Ell.*) pilose on the margin, and upper part ; *ligule* obsolete. *Panicles* terminal and lateral, oblong, rather slender or contracted ; branches erect. *Spikelets* smooth, acuminate, with the beak often a little curved or oblique, somewhat secund, in interrupted racemes : lower *glume* ovate, acute, scarcely half as long as the upper. Upper *palea* of the *abortive floret* oblong, rather obtuse, sometimes a little emarginate, (bifid, *Torr.*) ciliate, with a green nerve on each edge. *Perfect floret* a third shorter than the upper glume, oblong, very smooth and shining.

Hab. Fields and meadows : common. *Fl.* July. *Fr.* September.

Obs. This varies considerably in size and pubescence. The spikelets are generally one third or one half larger than in the preceding species. The *specimen*, in Dr. *Gray's* work, does not exactly quadrate with our plant.

11. P. proliferum, *Lam.* Culm assurgent, geniculate, branched at the joints, glabrous ; sheaths smooth and loose ; panicles terminal and axillary, diffuse and expanding ; spikelets racemose, smooth ; abortive floret without an upper palea. *Beck, Bot. p.* 396. Specim. *Gray, Gram.* 1. *no.* 34.

P. dichotomiflorum. *Mx. Am.* 1. *p.* 48.

P. geniculatum. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 123. *Bart. Phil.* 1. *p.* 47. *Ell. Sk.* 1. *p.* 117.

Proliferous Panicum.

Whole plant smooth. *Root* annual. *Culm* 1 to 2 or 3 feet long, stout and somewhat succulent, geniculate, assurgent, branched. *Leaves* lanceolate, nerved, slightly scabrous on the margin ; *sheaths* loose, and somewhat inflated ; *ligule* ciliate, or beard-form. *Panicles* rather large, spreading ; *branches* straight, scabrous, the principal ones nodosely articulated at base. *Spikelets* lanceolate, acute ; lower *glume* short, very broad, amplexicaul, obtuse, the upper one ovate-lanceolate, acute, 7-nerved : *Abortive floret* without an upper *palea*. *Perfect floret* rather shorter than the upper glume, lanceolate, acute, smooth and shining, obscurely striate.

Hab. Wet meadows : margin of Schuylkill : not common. *Fl.* Sept. *Fr.* Octo.

Obs. Found by D. Townsend, Esq. in 1829. A dwarfish variety, much branched and spreading, with culms not more than a span long, occurs about West Chester.

12. P. Crus galli, *L.* Racemes dense, spikeform, alternate and in pairs, compound ; rachis about 5-angled, hirsutely scabrous ; glumes hispid with cartilaginous bristles ; lower palea of the abortive floret terminating in a long scabrous awn ; sheaths of the leaves smooth. *Beck, Bot. p.* 393.

Echinochloa Crus galli. *Beauv. Lindl. Ency. p.* 54.

Cock's foot Panicum.

Root annual. *Culm* 2 to 5 feet high, terete, smooth. *Leaves* broad-lanceolate, flat, nerved, serrulate on the margin: *sheaths* striate, smooth; *ligule* none. *Panicle* pyramidal, with the spikelets crowded in dense, spikeform, compound racemes, on the branches. *Spikelets* ovoid, plano-convex, echinate, awned; lower *glume* short, ovate, acute, 3-nerved; the upper one as long as the perfect floret, ovate, acuminate, 5-nerved, with bristles on the nerves. *Abortive floret* with 2 *paleæ*; the lower one ovate, flat, 3 nerved, with a double row of cartilaginous bristles on the marginal nerves, and terminating in a long scabrous awn; the upper one ovate, acute, membranaceous, nearly as long as the perfect floret. *Perfect floret* ovate, plano-convex, acuminate, firm, smooth and shining. *Seed* compressed, orbicular, white or ash-colored.

Hab. Wet places: meadows, drains of Barn yards: common. *Fl.* Aug. *Fr.* Sept.

Obs. This is believed to be an *introduced* plant. There are 2 *varieties* of it; one with *hispid sheaths*, and the other *awnless*. The awnless variety is rare in this County. About 30 additional species are known in the U. States, and probably a number more remain to be determined,—particularly in the South. The foregoing are all that I have been able to ascertain, in Chester County. They are all worthless to the agriculturist, and regarded as little better than mere weeds.

28. SETARIA. *Beauv. Agrost. p.* 51.

[Latin *Seta*, a Bristle; from the bristly involucres of the spikelets.]

Inflorescence a compound cylindrical *Spike*: *Spikelets* 2-flowered, invested with an *involucre* of 2 or more Bristles. *Glumes* 2, unequal, herbaceous. *Inferior floret* abortive; *paleæ* 1 or 2, herbaceous. *Superior floret* perfect; *paleæ* cartilaginous.

1. S. VIRIDIS, *Beauv.* Spike cylindric, green; involucre of 4 to 10 fasciculate bristles, much longer than the spikelets; paleæ of the perfect floret longitudinally striate, punctate; margins of the sheaths pilose. *Beck, Bot. p.* 397.

Panicum viride. *Willd. Sp.* 1. *p.* 335. *Pers. Syn.* 1. *p.* 81. *Ait. Kew.* 1. *p.* 140. *Pursh, Am.* 1. *p.* 66. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 102.

Pennisetum viride. *Nutt. Gen.* 1. *p.* 55. *Bart. Phil.* 1. *p.* 51. *Eat. Man. p.* 254.

GREEN SETARIA. *Vulgò*—Green Foxtail. Bottle grass.

Root annual. *Culm* 2 to 3 feet high, glabrous. *Leaves* lanceolate, flat, rather scabrous, minutely serrulate on the margin: *sheaths* striate, pilose on the margin; *ligule* bearded. *Spike* terminal, compound, nearly cylindric; *rachis* hirsute with short hairs; bristles of the *involucre* green, scabrous upwards, much longer than the spikelets. Lower *glume* broad-ovate, short, amplexicaul, 3-nerved; upper one oblong-ovate, as long as the spikelet, 5-nerved. *Abortive floret* neuter; upper *palea* very small, acute, entire? (bifid, *Torr.*). *Paleæ* of the *perfect floret* smooth, puncticulate, striate longitudinally, with a very slight transverse rugosity, under a lens.

Hab. Cultivated grounds: frequent. *Fl.* July. *Fr.* September.

Obs. All our species of *Setaria* are believed to be naturalized foreigners. This one was first collected, here, by Mr. JOSHUA HOOPES. Its general resemblance to *S. glauca*, or common Foxtail, renders it liable to be passed by as a green variety of that plant.

2. S. Germanica, Beauv. *Spike ovoid-oblong, yellowish green: involucre of 4 to 8 bristles, about as long as the spikelets; perfect floret striately punctate, obscurely 3-nerved.*

Panicum Germanicum. Willd. Sp. 1. p. 336. Pers. Syn. 1. p. 81. Ait. Kew. 1. p. 140. Muhl. Gram. p. 104.

Pennisetum Germanicum. Eat. Man. p. 254.

German Setaria. Vulgò—*Millet. Bengal Grass.*

Root *annual.* Culm 2 to 4 *feet high.* Leaves *lanceolate, flat, serrulate on the margin;* sheaths *striate, pubescent on the margin;* ligule *bearded.* Spike *compound, ovoid-oblong, or cylindric;* rachis *densely hirsute with long hairs; bristles of the* involucre *about as long as the spikelets, sometimes longer, yellowish.* Glumes *unequal, lower one small, ovate. Upper* palea *of the* abortive floret *very minute.* Paleæ *of the* perfect floret *smooth, minutely striate-punctate.*

Hab. *Fields, in fallow grounds: rare.* Fl. *July.* Fr. *August.*

Obs. Doctor Muhlenberg *supposed that this might be a variety of S.* viridis,—*to which it is certainly allied; but it seems to be sufficiently distinct. Some years ago, it was introduced here as an object of culture, and excited much interest for a time, among the Farmers. It was soon found, however, not to be as valuable as the usual summer crop, of which it occupied the place; and the cultivation of it is now pretty much abandoned. The* seed *is sown in the early part of May.*

3. S. glauca, *Beauv.* Spike cylindric, tawny yellow; involucre of 6 to 10 or 11 fascicled bristles, much longer than the spikelets; paleæ of the perfect floret transversely rugose. *Beck, Bot. p.* 397.

Panicum glaucum. *Willd. Sp.* 1. *p.* 335. *Mx. Am.* 1. *p.* 46. *Pers. Syn.* 1. *p.* 81. *Ait. Kew.* 1. *p.* 140. *Pursh, Am.* 1. *p.* 66. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 100. *Ell. Sk.* 1, *p.* 112. *Bigel. Bost. p.* 40.

Pennisetum glaucum. *Nutt. Gen.* 1. *p.* 55. *Bart. Phil.* 1. *p.* 51. *Florul. Cestr. p.* 17. *Eat. Man. p.* 254.

Glaucous Setaria. *Vulgò*—Fox-tail Grass.

Root annual. *Culm* 2 to 3 feet high. *Leaves* lanceolate, keeled, slightly scabrous, pilose at base: *sheaths* striate, smooth; *ligule* bearded. *Spike* cylindric, 2 to 4 inches long; *rachis* pubescent. Bristles of the *involucre* scabrous upwards, much longer than the spikelets, becoming tawny or orange-yellow, when mature. *Abortive floret* sometimes neutral (often staminate,); upper *palea* ovate, nearly as long as the lower one, (very minute, *Torr.*). *Paleæ* of the *perfect floret* crossed by undulate wrinkles.

Hab. Cultivated grounds; stubble fields, orchards, &c. common. *Fl.* July. *Fr.* Aug

4. S. verticillata, *Beauv.* Spike subverticillate; bristles of the involucre in pairs, retrorsely scabrous; paleæ of the perfect floret roughish-punctate. *Beck, Bot. p.* 397.

Panicum verticillatum. *Willd. Sp.* 1. *p.* 334. *Pers. Syn.* 1. *p.* 80. *Ait. Kew.* 1. *p.* 139. *Pursh, Am.* 1. *p.* 66. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 102. *Bigel. Bost. p.* 40.

Pennisetum verticillatum. *Nutt. Gen.* 1. *p.* 55. *Bart. Phil.* 1. *p.* 51. *Eat. Man. p.* 254.

Verticillate Setaria.

Root annual. *Culm* about 2 feet high, smooth. *Leaves* lanceolate, acuminate, scabrous on the margin: *sheaths* smooth, pilose on the margin: *ligule* bearded. *Spike* 2 to 3 inches long, composed of interrupted verticils; *rachis* angled, sulcate.

scabrous. *Spikelets* clustered, on short pedicels. Bristles of the *involucre* in pairs, retrorsely scabrous, about twice as long as the spikelets, yellowish green, sometimes purplish. *Abortive floret* neutral; upper *palea* small. *Paleæ* of the *perfect floret* roughish-punctate, so as to appear papillate.

Hab. Gardens, and cultivated lots: West Chester: not common. *Fl.* July. *Fr.* Aug.

Obs. The retrorse teeth on the bristles of this species render the spikes somewhat adhesive to objects with which they come in contact. Four other species are enumerated in the U. States: of which the S. *italica*, with very large spikes, grows along the river Delaware. The others are Southern plants. None of them possess any value to the Agriculturist, except the S. *germanica*.

29. CENCHRUS. *L. Nutt. Gen.* 58.

[Greek, *Kenchros*, Millet: probably applied by the ancients to another plant.]

Inflorescence racemose: *Spikelets* 1 to 3, enclosed in a laciniate, echinate, cartilaginous *Involucre*. *Glumes* 2, unequal, the lower one smaller. *Florets* dissimilar; the lower one Staminate, the other Perfect. *Styles* 2, united at base.

1. C. TRIBULOIDES, *L.* Involucres globose, pubescent, muricate-spinose, split on one side, enclosing 2 or 3 spikelets, each one or two-flowered. *Beck, Bot. p.* 399.

C. echinatus, *var.* tribuloides, *Torr. Fl.* 1. *p.* 69. *Eat. Man. p.* 86. *Also ?* C. echinatus, *Muhl. and other American Botanists.*

TRIBULUS-LIKE CENCHRUS. *Vulgò*—Bur-grass. Hedge-hog Grass.

Root annual, fibrous. *Culm* decumbent, 1 to 2 feet long, geniculate, branching, glabrous. *Leaves* lanceolate, acuminate, rather short, slightly scabrous on the margin: *sheaths* loose, smooth; *ligule* bearded. *Raceme* terminal, of 6 to 12 or 14 alternate, involucrate heads, or clusters; *rachis* angular, flexuose, slightly scabrous (pilose, *Muhl. Torr.* and *Ell.*). *Involucre* urceolate, or globose, laciniate, usually split to the base on one side, hairy, armed with rigid, subulate, scabrous spines; villous within; including 1, 2, or 3 *spikelets*, each 1 or 2-flowered. *Glumes* unequal, herbaceous. *Abortive florets* mostly staminate; *paleæ* membranaceous. *Perfect florets* lance-ovate, acuminate; *paleæ* subcartilaginous, nerved, smooth. *Seed* compressed, orbicular-ovate, brown.

Hab. Mica-slate hills, near Jno. D. Steele's: rare. *Fl* Aug. *Fr.* September.

Obs. Prof. *Torrey* expresses the opinion (*in Litt.*) that "it is doubtful whether the true C. *echinatus* inhabits N. America; our *two* species (as some call them) being merely forms of C. *tribuloides*." The prickly involucres are a grievous pest, wherever this grass prevails in cultivated grounds, or about houses. It is fortunately quite rare, as yet, in Chester County. It is believed to be the only species of the genus in the U. States; and was first observed, here, by Mr. JOSHUA HOOPES, in 1833.

DIV. II. STIPACEÆ—*Stipa, or Feather-grass Tribe.*

INFLORESCENCE *Panicled.* Spikelets *solitary, 1-flowered.* Glumes *membranaceous.* Paleæ *mostly 2; lower one coriaceous, involute, awned.*

30. ARISTIDA. *L. Nutt. Gen.* 85.

[Latin, *Arista*, an Awn, or beard; characteristic of the genus.]

Glumes 2, membranaceous, unequal. *Paleæ* mostly 2, pedicellate; lower one coriaceous, involute, 3-awned at the tip; upper one very minute, or obsolete.

1. A. DICHOTOMA, *Mx.* Culm cespitose, dichotomously branching; panicle contracted, racemose; lateral awns very short; the intermediate one nearly as long as the palea, contorted. *Beck, Bot. p.* 400. SPECIM. *Gray, Gram.* 1. *no.* 7.
FORKED ARISTIDA. *Vulgò*—Poverty Grass.

Root perennial? (annual or biennial, *Torr.*) *Culm* 9 to 15 inches long, slender, often oblique, or decumbent, geniculate, branching somewhat dichotomously at the joints, glabrous. *Leaves* flat, narrow, with setaceous points, minutely serrulate; *sheaths* very short, open, pilose at throat; *ligule* very short. *Spikelets* elongated, slender, disposed in racemes, on clavate peduncles. *Glumes* lance-linear, cuspidate, a little longer than the palea (shorter, *Torr.*). Upper *palea* obsolete, or none; *lower one* involute, terete, on a short pubescent pedicel; lateral *awns* straight, not one fourth the length of the palea, middle one contorted, or bent horizontally.

Hab. Dry sterile soils: Mica-slate hills: frequent. *Fl.* Aug. *Fr.* Sept.

2. A. STRICTA, *Mx?* Culm and leaves strictly erect; panicle slender racemose, spikelets appressed; lateral awns straight, erect; the middle one longer, at first erect, finally spreading. *Beck? Bot. p.* 400.
UPRIGHT ARISTIDA. *Vulgò*—Poverty Grass.

Root perennial? *Culm* erect, setaceously slender, 12 to 18 inches high, glabrous. *Leaves* setaceous, erect, convolute towards the extremity; *sheaths* short, sparingly pilose, with long hairs at throat; *ligule* short. *Spikelets* acicular, in a slender, erect, racemose panicle. *Glumes* nearly equal, very acute. *Palea* single? closely involute; *awns* very scabrous; the lateral ones erect, shorter than the palea, the middle one longer than the palea, at first erect, finally oblique.

Hab. Dry sterile old fields: frequent. *Fl.* August. *Fr.* September.

Obs. Our plant does not quite agree with the descriptions in the books,—and in its more advanced stages, seems to approach the preceding: but I have supposed it to be the A. *stricta*, or a variety of it. Seven or eight additional species are enumerated in the U. States. They are grasses of no value; and always indicative of a poor soil.

DIV. III. AGROSTIDEÆ—*Agrostis, or Herd's Grass Tribe.*

INFLORESCENCE *mostly Panicled, sometimes Spiked.* Spikelets *solitary, 1-flowered.* Glumes *and* Paleæ *of nearly similar texture, usually keeled.*

a. *Flowers Monandrous.*

31. CINNA. *L. Nutt. Gen.* 69.

[Greek, *Kein*, to heat; a supposed quality of the plant.]

Glumes 2, nearly equal, compressed, the upper one 3-nerved. *Palea* 2, compressed, shortly stipitate, naked at base; lower one larger, enclosing the upper, with a short awn near the summit.

1. C. ARUNDINACEA, *Willd.* Culm simple, glabrous; leaves linear-lanceolate; panicle large, loose, with the branches somewhat in four's, capillary. *Beck, Bot. p.* 390.
Agrostis Cinna. *Pursh, Am.* 1. *p.* 64.
Muhlenbergia Cinna. *Gray, Gram.* 1. SPECIM. *no.* 16.
REED-LIKE CINNA.

Root perennial. *Culm* erect, 2 to 4 or 5 feet high, simple, glabrous. *Leaves* linear-lanceolate, a foot or more in length, nerved, scabrous on the margin: *sheaths* smooth, striate; *ligule* membranaceous, elongated, lacerated. *Panicle* terminal, 6 to 12 inches long, rather contracted, or attenuated above, somewhat secund and nodding. *Glumes* lance-linear, acute, margins scarious; upper one 3-nerved, with a scabrous keel. *Paleæ* unequal; the lower one larger, about as long as the upper glume, with a nerve on each side, and a short straight awn, a little below the tip. *Stamen* 1 *Seed* oblong, acute.

Hab. Moist, rich woodlands; frequent. *Fl.* August. *Fr.* September.

Obs. This is a fine looking grass; and if it could be cultivated successfully in open grounds, might be worthy the attention of Agriculturists. It seems, however, to prefer growing in the shade of rich woodlands. It is the only species of the genus in the U. States; and has been denied that distinction, by several modern Botanists. A number have referred it to *Agrostis*,—and lately it has been joined to *Muhlenbergia:* but it appears to me to be sufficiently distinct from both.

b. *Flowers Triandrous.*

† *Spikelets in Panicles.*

32. TRICHODIUM. *Mx. Nutt. Gen.* 65.

[Greek, *Thrix*, Hair, and *Eidos*, Form; from its hair-like inflorescence.]

Panicle capillary. *Glumes* 2, nearly equal, very acute, scabrous on the keel. *Palea* 1, shorter than the glumes, sometimes awned. *Seed* loosely enclosed by the palea.

1. T. LAXIFLORUM, *Mx.* Culm erect; leaves lance-linear, short, scabrous, lower ones involute; panicle diffuse, with long, capillary branches, trichotomously divided near the end; spikelets in terminal clusters. *Beck, Bot p.* 389. ICON. *Mx. Am.* 1. *tab.* 8.
Agrostis Michauxii, *var.* laxiflora. *Gray, Gram.* 1. SPECIM. *no.* 17.
LOOSE-FLOWERED TRICHODIUM. *Vulgò*—Hair-grass.

Root perennial. *Culm* erect, mostly simple, 1 to 2 feet high, very slender. Lower *leaves* 3 to 6 inches long, becoming involute and almost filiform; upper ones shorter, (1 to 3 inches,) flat, linear, nerved and scabrous: *sheaths* rather open, somewhat scabrous; *ligule* lanceolate, membranaceous, lacerate. *Panicle* purple, very loose; *branches* verticillate, the lower ones in 5's or 6's, upper ones in 3's, at first erect, finally spreading, sharply scabrous, long, and very slender or hair-like, divided trichotomously near the end, with the *spikelets* in terminal clusters. *Glumes* lance-linear, acuminate, the lower one a little longer (shorter, *Torr.*). *Palea* lanceolate, awnless.

Hab. Old fields; Serpentine ridge: frequent. *Fl.* June. *Fr.* Aug.

Obs. This grass, so remarkable for its handsome capillary panicles, was first collected, here, in 1829, by D. TOWNSEND, Esq.

2. T. SCABRUM, *Muhl.* Culm geniculate at base, assurgent, branched; leaves linear-lanceolate, flat, scabrous on the margin; panicle oblong, branches spreading, or divaricate, twice or thrice trichotomously divided; spikelets rather scattered. *Beck, Bot. p.* 389.
T. decumbens. *Mx. Am.* 1. *p.* 42. *Pers. Syn.* 1. *p.* 73. *Pursh, Am.* 1. *p.* 61. *Nutt. Gen.* 1. *p.* 42. *Lindl. Ency. p.* 56. Also ? *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 60.

T. perennans. *Ell. Sk.* 1. *p.* 99. Icon, *Ell. l. c. tab.* 5. *f.* 2. Also, *Eat. Man. p.* 369.
Agrostis scabra. *Willd. Sp.* 1. *p.* 370.
Also ? A. anomala. *Willd. l. c.*
Rough Trichodium.

Root perennial. *Culm* 1 to 2 feet high, geniculate at base, often somewhat decumbent, and branching. *Leaves* of nearly uniform length, (4 to 6 inches,) linear-lanceolate, striate, scabrous on the margin: *sheaths* generally closed, smooth; *ligule* oblong, obtuse, (acute, *Muhl.*) lacerate. *Panicle* pale green, oblong; *branches* scabrous, very slender, but not so long as in the preceding species, subdivided trichotomously two or three times, becoming horizontal, or divaricate: *spikelets* not clustered. *Glumes* with scarious margins, strongly serrulate on the keel; the lower one a little longer than the upper. *Palea* generally awnless; but occasionally with a conspicuous awn on the back.

Hab. Dry, open woodlands, and road sides: common. *Fl.* July. *Fr.* Sept.

Obs. I think Dr. *Gray* has erred, in making this synonymous with the preceding,—as they appear to me quite distinct. Dr. *Baldwin* gave me a specimen of T. *perennans*, *Ell.* from Georgia, which seems to be identical with our plant. A *variety* occurs, here, of coarser growth, with the leaves larger, and very scabrous. One or two other species are enumerated in the U. States. The Genus is very nearly allied to *Agrostis*.

33. AGROSTIS. *L. Nutt. Gen.* 68.

[Greek, *Agros*, a Field: it being eminently an occupant of fields and pastures.]

Glumes 2, nearly equal, sometimes longer, often shorter than the paleæ, the lower one larger. *Paleæ* 2, unequal, the lower one larger, sometimes awned, often hairy at base, enclosing the seed.

* *Paleæ awnless.*

1. A. vulgaris, *With.* Culm erect; panicle spreading, with the branches often smoothish, finally divaricate; lower palea twice the size of the upper; ligule short, truncate. *Beck, Bot. p.* 387.
A. hispida? *Willd. Sp.* 1. *p.* 370.
A. dispar? *Mx. Am.* 1. *p.* 52. *Ell. Sk.* 1. *p.* 136.
A. polymorpha. *Gray, Gram.* 2. Specim. *no.* 108.
Also ? A. alba. *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 69. *Bart. Phil.* 1. *p.* 42.
Common Agrostis. *Vulgò*—Herd's Grass. Red-top.

Root perennial, creeping. *Culm* erect, or ascending, 1 to 2 feet high. *Leaves* linear-lanceolate, nerved, scabrous; *sheaths* striate, smooth. *Panicle* mostly purple: *branches* capillary, alternately semiverticillate, spreading, smoothish, or frequently scabrous. *Glumes* smooth, except on the keel, lanceolate, acute, at length expanding. *Paleæ* membranaceous, smooth at base; the lower one nearly as long as the glumes, the upper one very small, retuse.

Hab. Pastures, and low meadow grounds: common. *Fl.* July. *Fr.* August.

Obs. There is some obscurity and confusion in the descriptions of this well known grass,—perhaps in consequence of its polymorphous character. I think it is undoubtedly the A. *alba*, of *Muhlenberg*. I have *dwarf* specimens, from our Mica-slate hills, which appear to be identical with A. *vulgaris*, var. *pumila*, of *Persoon*: But the common character of the plant in our meadows, is that of A. *alba*;

Muhl. Although completely naturalized, it is believed to be a foreigner. It affords a tolerably good pasture for cattle ; and is valuable in swampy grounds,—which its roots tend to consolidate: but it is not much esteemed for hay,—and is now rarely, if at all, cultivated in this County.

2. A. ALBA, *L.* Culm decumbent, geniculate, radicating at the lower joints; panicle contracted, at length spreading, with the branches very scabrous ; paleæ nearly equal, the lower one sometimes awned near the tip ; ligule oblong, lacerate. *Beck, Bot. p.* 387.
A. decumbens. *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 68. *Bart. Phil.* 1. *p.* 42.
WHITE AGROSTIS.

Root perennial, creeping. *Culm* decumbent, geniculate, stoloniferous. *Leaves* linear-lanceolate, scabrous ; those of the suckers erect, subulate ; *sheaths* smooth ; *ligule* elongated, membranaceous. *Panicle* often dense, finally spreading, greenish white, sometimes purple. Lower *palea* occasionally awned on the back, near the tip.

Hab. Wet meadows, and low grounds: frequent. *Fl.* June. *Fr.* July.

Obs. Also a naturalized foreigner: and nearly related to the preceding. The noted *Fiorin grass*, of Ireland, is considered a *variety* of this.

3. A. LATERIFLORA, *Mx.* Culm ascending, nodose, branching above; panicles terminal and lateral, contracted, dense-flowered ; glumes acuminate ; paleæ mostly longer than the glumes, nearly equal, pubescent at base. *Beck, Bot. p.* 388.
A. mexicana. *Willd? Sp.* 1. *p.* 374. *Pers? Syn.* 1. *p.* 76. *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 67. *Bart. Phil.* 1. *p.* 42. Also ? *Pursh, Am.* 1. *p.* 64.
Muhlenbergia mexicana. *Gray, Gram.* 1. SPECIM. *no.* 14.
LATERAL-FLOWERED AGROSTIS.

Root perennial, creeping. *Culm* erect, or ascending, 18 inches to 3 feet high, with numerous swelling nodes, much branched, and leafy above, often naked below. *Leaves* lanceolate, nerved, scabrous, especially on the upper surface ; *sheaths* smooth, compressed, and but partially embracing the culm ; *ligule* short, obtuse and lacerate. *Panicles* numerous, terminating the branches, contracted, dense-flowered, and somewhat spike-form ; the lateral ones partly sheathed at base. *Glumes* narrow-lanceolate, acuminate, sometimes purple, often white, with a green, scabrous keel. *Paleæ* nearly equal, pubescent at base, generally longer than the glumes, sometimes twice as long; the lower one occasionally terminating in an awn.

Hab. Moist grounds: Borders of woods, and fields: common. *Fl.* Aug. *Fr.* Sept.

Obs. This species affords an indifferent pasture, in the latter part of summer; but is not valuable. The A. *filiformis, Muhl.* which Prof. *Torrey* makes a *variety* of this,—with erect culm and branches, filiform panicles, and glumes often as long as the paleæ,—is also frequent here.

4. A. SOBOLIFERA, *Muhl.* Culm erect, somewhat branching ; panicle simple, very slender or filiform, with the branches appressed ; paleæ equal, longer than the glumes, hairy at base ; the lower one mucronate at apex. *Beck, Bot. p.* 388.
Muhlenbergia sobolifera. *Gray, Gram.* 2. SPECIM. *no.* 107.
SOBOLIFEROUS AGROSTIS.

Root perennial, creeping. *Culm* slender, about 2 feet high, soboliferous and sometimes decumbent at base, sparingly branched; branches erect and filiform, nodes not swelling. *Leaves* narrowish, lance-linear, 4 to 6 inches long, scabrous: *sheaths* open, smooth; *ligule* short, truncate (none, *Muhl.*). *Panicles* filiform, resembling very slender spikes; branches alternate, or in pairs, appressed; *spikelets* crowded. *Glumes* acute. *Paleæ* about one third longer than the glumes, awnless, hairy at base; the lower one keeled, roughish, mucronate.

Hab. Open, rocky woodlands: frequent. *Fl.* August. *Fr.* Sept.

Obs. This resembles the *var. filiformis*, of the preceding species; but has, generally, fewer branches, or lateral panicles.

5. A. VIRGINICA, *Muhl.* Culms numerous, procumbent at base, assurgent; leaves subdistichous, involute, rigid; panicles spike-form, terminal and lateral, the lateral ones concealed; glumes nearly equal, about as long as the paleæ. *Beck, Bot. p.* 389. Not ? of *L. Willd.* nor *Ell.*

A. pungens. *Pursh, Am.* 1. *p.* 64. Not of *Schreb. Willd.* nor *Pers.* Vilfa vaginiflora. *Gray, Gram.* 1. SPECIM. *no.* 3.

VIRGINIAN AGROSTIS.

Root annual? fibrous. *Culm* 9 to 18 inches long, nearly simple, somewhat cespitose, assurgent, often procumbent, geniculate, scabrous below the nodes. *Leaves* 2 to 3 inches long, erect, subulate, rigid, involute and filiform at the point, somewhat scabrous, pilose at base: *sheaths* smooth, pilose at throat, often loose, and tumid with the enclosed panicles; *ligule* obsolete. *Panicles* oblong, compressed, spike-form; branches very short, scabrous, alternate or in pairs. *Glumes* nearly equal, lanceolate, acute, keeled, membranaceous. *Paleæ* nearly equal, about as long as the glumes, (sometimes rather shorter,) ovate-lanceolate, acute, pubescent. *Stamens* mostly wanting in the lateral panicles.

Hab. Dry, sandy banks; road-sides: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. Although this species differs much, in habit, from the others, I do not perceive sufficient grounds for a generic distinction.

* * *Paleæ awned.*

6. A. TENUIFLORA, *Willd.* Culm erect, nearly simple, pubescent about the joints; branches appressed; panicle contracted, very slender; paleæ twice as long as the glumes. *Beck, Bot. p.* 388.

Muhlenbergia Willdenovii. *Gray, Gram.* 1. SPECIM. *no.* 12.

SLENDER-FLOWERED AGROSTIS.

Root perennial, creeping. *Culm* about 3 feet high, simple, or with a few appressed branches, retrorsely pubescent near the nodes. *Leaves* broadish, lanceolate, nerved, scabrous, 6 to 9 inches long, spreading: *sheaths* roughish pubescent; *ligule* obsolete, or very short. *Panicle* long, very slender; with long, rather remote, filiform, erect branches. *Glumes* nearly equal, lanceolate, acuminate. *Paleæ* about twice as long as the glumes, scabrous, pilose at base; lower one terminating in an awn 3 or 4 times as long as the spikelet.

Hab. Open woodlands: frequent. *Fl.* Aug. *Fr.* September.

7. A. SYLVATICA, *Torr.* Culm ascending, much branched, diffuse, nodose, smooth; panicle slender, somewhat dense-flowered; paleæ rather longer than the glumes. *Beck, Bot. p.* 388. Not of *Willd.*

A. diffusa. *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 64. Not of *Host.* Muhlenbergia sylvatica. *Gray, Gram.* 1. SPECIM. *no.* 13.

WOOD AGROSTIS.

Root perennial, creeping. *Culm* 2 to 3 feet long, very much branched and diffuse, smooth; nodes swelling. *Leaves* lanceolate, nerved, scabrous, 4 to 6 inches long: *sheaths* smooth, open; *ligule* lacerate. *Panicles* slender, with the spikelets often somewhat densely clustered, on the branches. *Glumes* nearly equal, lanceolate, with a long slender acumination. *Paleæ* a little (and often very little) longer than the glumes, scabrous, somewhat pilose at base; the lower one ending in an awn 4 or 5 times as long as the spikelet; awn often purple.

Hab. Borders of woods; Eachus' clearing: frequent. *Fl.* Sept. *Fr.* Octo.

Obs. Collected by D. TOWNSEND, Esq. in 1830. It is nearly allied to the preceding; but differs in habit—being much branched, and diffuse,—and more resembles *Muhlenbergia diffusa*, at first view. Several of the species have lately been referred to *Muhlenbergia*; but it seems to me to be rather an unnecessary innovation. Some 15 or 16 additional species, (as the genus formerly stood,) have been enumerated in the U. States. Our native species have not been considered particularly valuable, by Agriculturists.

34. MUHLENBERGIA. *Schreb.* *Nutt. Gen.* 64.

[In honor of the late *Henry Muhlenberg*, D. D. one of our most distinguished Botanists.]

Glumes 2, very minute, unequal; one scarcely perceptible. *Paleæ* 2, many times longer than the glumes, linear-lanceolate, nerved, hairy at base; the lower one terminating in a long awn.

1. M. DIFFUSA, *Schreb.* Culm decumbent, branching, diffuse; leaves lance-linear; panicles terminal and lateral, slender, branched, branches appressed; awn about as long as the palea. *Beck, Bot. p.* 391. ICON, *Ell. Sk.* 1. *tab.* 5. *f.* 1. SPECIM. *Gray, Gram.* 2. *no.* 106.
Dilepyrum minutiflorum. *Mx. Am.* 1. *p.* 40.
SPREADING MUHLENBERGIA. *Vulgò*—Drop-seed Grass.

Root perennial, fibrous. *Culm* slender, decumbent, 12 to 18 inches long, geniculate, compressed, branched, glabrous; branches assurgent. *Leaves* lance-linear, narrow, 2 to 3 inches long, scabrous, (glabrous, *Muhl.*): *sheaths* open, striate, smooth, pubescent at throat; *ligule* very short, finally lacerate, or ciliate. *Panicles* terminal and lateral, slender, often purple; *branches* alternate, somewhat distant, appressed, racemose, scabrous; *spikelets* all pedicellate. *Glumes* persistent, very minute; the lower one scarcely perceptible, the upper one truncate, laciniate-dentate. *Paleæ* unequal; the lower one longer, lance-linear, almost triangular, with 3 prominent scabrous nerves, and terminating in a slender scabrous awn, which is generally purplish, and a little longer than the palea. *Seed* linear-oblong, acute, brown.

Hab. Borders of open woodlands, and pastures: common. *Fl.* Aug. *Fr.* Sept.

2. M. ERECTA, *Schreb.* Culm erect, simple; leaves lanceolate; panicle terminal, simple, racemose; awn twice as long as the palea; upper palea with an awn at base, lodged in the dorsal groove. *Beck, Bot. p.* 391.
M. aristata. *Pers. Syn.* 1. *p.* 73.
M. Brachyelytrum. *Gray, Gram.* 1. SPECIM. *no.* 11.
Dilepyrum aristosum. *Mx. Am.* 1. *p.* 40.
Brachyelytrum aristatum. *Torr. Fl.* 1. *p.* 102.

B. erectum. *Eat. Man. p.* 57.
ERECT MUHLENBERGIA.

Root perennial, creeping, soboliferous. *Culm* 2 to 3 feet high, retrorsely pubescent at and below the nodes. *Leaves* lanceolate, broadish, 4 to 6 inches long, scabrous, somewhat pilose, and ciliate on the margin: *sheaths* a little opening, pubescent, especially about the throat; *ligule* membranaceous, lacerate. *Panicle* simple, racemose, erect; *spikelets* all pedicellate, much larger than in the preceding species. *Glumes* very unequal; the lower one scarcely perceptible, the upper one subulate, rigid, about 4 times shorter than the paleæ (10 times, *Torr.*). *Paleæ* lance-linear, strongly nerved, scabrous, with short sharp bristles on the nerves, pilose at base; the lower one longer, 5-nerved terminating in a scabrous awn more than twice as long as the palea; the upper one involute, grooved on the back, with an awn *at base* about two thirds its length, which is lodged in the groove. (*Beauvois* considers this awn as the rudiment of an abortive floret.) *Seed* long, lance-linear, grooved on one side, brown, with a long white pubescent acumination.

Hab. Rocky woodlands; Brandywine; W. Chester: frequent. *Fl.* July. *Fr.* Aug.

Obs. This species is not so common as the preceding. It differs considerably from the M. *diffusa*; but, I think, is more naturally associated with it than those species of *Agrostis*, which have been recently referred to *Muhlenbergia*. The foregoing are the only species of the genus,—excluding the *Agrostides* alluded to. The M. *diffusa* affords an indifferent pasture; but neither of them can be considered of much value.

† † *Spikelets in a dense cylindrical Spike.*

35. PHLEUM. *L. Nutt. Gen.* 76.

[A name used by the ancient *Greeks*; probably for a different plant.]

Glumes 2, equal, much longer than the paleæ, keeled, compressed, with an awn proceeding from the midrib. *Paleæ* 2, included in the glumes, awnless, truncate.

1. P. PRATENSE, L. *Culm erect; spike cylindric, long; glumes truncate, mucronate, with a ciliate keel; awn shorter than the glume.* Beck, Bot. p. 392. ICON, Ell. Sk. 1. tab. 7. f. 1.
MEADOW PHLEUM. Vulgò—*Timothy. Cat's-tail Grass.*
Gallicè—*Fléole des Prés.* Germanicè—*Das Wiesen-lieschgras.*

Root *perennial, fibrous, or somewhat tuberous when old.* Culm 2 *to* 4 *feet high, simple, erect, terete, smooth.* Leaves *linear-lanceolate, flat, nerved, glaucous, somewhat scabrous: sheaths striate, smooth;* ligule *membranaceous, obtuse, at length lacerate.* Spike 3 *to* 6 *or* 8 *inches long, dense, cylindric, green.* Glumes *equal, compressed, abruptly mucronate, pubescent, ciliate on the keel.* Paleæ *concealed in the glumes; lower one larger.* Anthers *purple.* *Stigmas* white.

Hab. *Fields and meadows: common.* Fl. *June.* Fr. *July.*

Obs. *This grass is a native of Europe; but is extensively naturalized. In New England it is known by the name of* Herd's Grass; *a name which is here applied exclusively to* Agrostis vulgaris. *The* meadow Phleum, *or* Timothy, *is very generally cultivated in Chester County; and is undoubtedly one of the most valuable grasses known to our farmers. Mixed with the red clover,* (Trifolium pratense,) *it makes the best quality of hay. It requires a good soil; and is con-*

sidered a severe and exhausting crop. The seed *is usually sown in autumn, among, and immediately after,* Wheat *and* Rye *; though it succeeds very well when sown in the spring. Prof.* Eaton *enumerates one other species, in the United States.*

† † † *Spikelets in unilateral, Panicled Spikes.*

36. SPARTINA. *Schreb. Gen. Pl.* 98.

[Said to be formed from *Spartum*; on account of its resemblance to the plant called *Lygeum Spartum.*]

Spikelets imbricated in a double row, in unilateral *spikes*. *Glumes* 2, unequal, compressed. *Palcæ* 2, rather unequal, compressed, awnless. *Style* long, bifid. *Seed* oblong, compressed.

1. S. CYNOSUROIDES, *Willd,* Leaves sub-linear, very long, convolute and filiform at the end ; spikes alternate, scattered, pedunculate ; glumes awned. *Beck, Bot. p.* 417. SPECIM. *Gray, Gram. 2. no.* 101. Not! of *Torr.* nor *Bigel.*
S. polystachia. *Muhl. Gram. p.* 53. Not of *Ell.* nor *Gray.*
Trachynotia cynosuroides. *Mx. Am.* 1. *p.* 64.
Limnetis cynosuroides. *Pers. Syn.* 1. *p.* 72. *Pursh, Am.* 1. *p.* 59. *Nutt. Gen.* 1. *p.* 38. Not? of *Eat. Man. p.* 206.

CYNOSURUS-LIKE SPARTINA.

Root perennial. *Culm* 3 to 5 feet high, glabrous, rather slender. *Leaves* very long, (2 feet and upwards,) narrow, nearly linear, slightly scabrous on the margin, rather inclining to be convolute, especially at the end, where they become filiform : *sheaths* striate, glabrous ; *ligule* bearded. *Panicle* slender, long, loose, rather secund; *spikes* one-sided, alternate, scattered, 1 and a half to 3 inches long, on peduncles half an inch to 2 inches in length. *Spikelets* imbricated in a double row, inserted alternately on two sides of the triangular *rachis*,—which is flat on the back, and acutely scabrous on the angles: *glumes* unequal, compressed, strongly serrulate on the keel ; the lower one about half as long as the upper, lance-linear, terminating in a scabrous awn-like acumination ; the upper glume lance-oblong, margin broad, white, and membranaceous, keel green, aculeate, striate or grooved on each side, and terminating in a scabrous awn, nearly as long as the glume. *Palcæ* nearly equal, compressed, shorter than the upper glume, white membranaceous, awnless, the lower one with a few prickles on the keel towards the apex. *Anthers* linear, pale yellow. *Style* long, bifid ; *stigmas* white. *Seed* lance-oblong, compressed.

Hab. Margin of the Schuylkill : Black rock : rare. *Fl.* August. *Fr* Sept.

Obs. Collected by D. TOWNSEND, Esq. in 1829. This species seems to have been confounded with S. *polystachya*, by several authors ; but, from the specimens given by Dr. *Gray*, they appear to be quite distinct. In S. *polystachya*, the leaves are much broader,—the spikes more numerous, and in more densely clustered panicles,—and the glumes are merely acuminate, or mucronate; whereas, in our plant, the glumes are conspicuously awned,—especially the upper one. Three additional species are described as natives of the U. States ; chiefly confined to the salt water districts, along the Sea coast.

Div. IV. Festucaceæ—*Festuca, or Fescue-grass Tribe.*

Inflorescence *Panicled.* Spikelets *solitary, one, few, or many-flowered.* Glumes *and* Paleæ *of nearly similar texture, usually keeled.* Lower palea *often awned, or mucronate;* upper palea *with two keels.*

§ 1. Arundineæ—*Reed-grass Groupe.*

Spikelets *few-flowered.* Florets *invested with a* pappus *at base,—or with* abortive rudiments, *in the form of* accessory paleæ.

† *Panicle loose.*

37. ARUNDO. *L. Nutt. Gen.* 106.

[Latin, *Arundo*, a Reed: Celtic, *Aru*, water: from its place of growth. *De Theis.*]

Spikelets many-flowered. *Glumes* 2, lanceolate, unequal. The lower *floret* staminate, and naked at base; the others perfect, on villous peduncles. *Paleæ* unequal; the lower one much longer, with a long, involute, awn-like acumination.

1. A. Phragmites, *L.* Spikelets 3 to 5-flowered; glumes shorter than the florets; paleæ awnless. *Beck, Bot. p.* 405.

Phragmites communis. *Torr. Fl.* 1. *p.* 103. *Eat. Man. p.* 262. *Gray, Gram.* 2. Specim. *no.* 127.

Hedge Arundo. *Vulgò*—Reed-grass.

Gallicè—Roseau à balais. *German.*–Gemeines Rohr. *Hispan.*—Caña.

Root perennial. *Culm* 8 to 12 feet high, often an inch or more in diameter at base, nodose, terete, glabrous. *Leaves* lanceolate, 1 to 2 feet long, and about 2 inches broad, attenuated at the end, glaucous, smooth, scabrous on the margin: *sheaths* closely embracing the culm, smooth; *ligule* very short, pilose or fimbriate. *Panicle* terminal, much branched, very large, loose; branches smoothish, long, slender, semi-verticillate, with a tuft of soft hairs at base. *Spikelets* lance-linear, (nearly subulate when young,) erect, pedunculate, 3 to 5 (mostly 3?) flowered. *Glumes* lanceolate, smoothish, the lower one much shorter (much longer, *Torr.*). Lowest *floret* staminate, (sometimes perfect?) sessile, naked at base; the upper ones pedicellate, the pedicels clothed with long, white, silky hairs, nearly as long as the florets (These hairs are scarcely perceptible in the young flowers.) *Paleæ* very unequal; the lower one linear-lanceolate, with a long slender acumination, which is involute, and resembles an awn. *Seed* with a pappus at base (*Muhl.*).

Hab. Borders of swamps: Wynn's meadows, Brandywine: rare. *Fl.* Aug. *Fr.* Sept.

Obs. Found by Mr. Joshua Hoopes, in 1834, at the above locality,—the only one known in Chester County. It is a fine looking plant, somewhat resembling *Broom corn*, in habit. There is often a sort of stricture across each leaf, as if a transverse nerve had been drawn a little tight. It is common both to Europe and America; but is the only species of the genus in the United States,—if the *Calamagrostides* are excluded.

†† *Panicle Contracted.*

38. CALAMAGROSTIS. *Roth. Nutt. Gen.* 70.
[Greek, *Kalamos*, a Reed, and *Agrostis*; from its affinity to both.]

Spikelets 1-flowered. *Glumes* 2, nearly equal, acute, or acuminate. *Paleæ* 2, mostly shorter than the glumes, surrounded with hairs at base; lower one mucronate, mostly awned below the tip; the upper one often with a stipitate pencil-form pappus at base.

1. C. CANADENSIS, *Beauv.* Panicle oblong, loose; glumes very acute, smoothish; the lower palea awned on the back. *Torr. Synop. ined.* (*fide Gray*). SPECIM. *Gray, Gram.* 1. *no.* 18. Not of *Nuttall.*
C. mexicana. *Nutt. Gen.* 1. *p.* 46. *Beck, Bot. p.* 401.
C. cinnoides. *Bart. Phil.* 1. *p.* 45 Not of *Florul. Cestr.*
Arundo Canadensis. *Mx. Am.* 1. *p.* 73. *Pursh, Am.* 1. *p.* 86. *Torr. Fl.* 1. *p.* 93. *Bigel. Bost. p.* 38. *Eat. Man. p.* 31.
A. cinnoides. *Muhl. Catal. p.* 13. *Ejusd. Gram. p.* 187.
Also, A. agrostoides. *Pursh, Am.* 1. *p.* 86.

CANADIAN CALAMAGROSTIS.

Root perennial *Culm* 3 to 4 feet high, glabrous. *Leaves* lance-linear, striate or nerved, somewhat scabrous; *sheaths* nerved, glabrous, lower ones retrorsely pubescent; *ligule* elongated, lacerate. *Panicle* erect, much divided, rather loose; branches capillary, aggregated in 5's or 6's. *Glumes* longer than the paleæ, acute or slightly acuminate, smoothish, scabrous on the keel. *Paleæ* unequal; the lower one with a slender awn, half way down the back; the upper one sometimes with a stipitate pappus at base; *hairs* at the base of the paleæ copious, as long or rather longer than the paleæ. *Seed* pubescent (*Muhl.*).

Hab. Swampy meadows: Londongrove: rare. *Fl* Aug. *Fr.* September.

Obs. This species was found in Londongrove township, by my amiable and venerable friend, the late Mr. JOHN JACKSON,—one of the earliest and most successful cultivators of Botany in Chester County.

2. C. COARCTATA, *Torr.* Panicle contracted, linear-oblong, somewhat dense and spike-form; glumes roughish-pubescent, acuminate, keeled; the lower palea awned a little below the summit; the upper one with a stipitate pappus at base. *Torr. Synop. ined.* (*fide Gray*). SPECIM. *Gray, Gram.* 1. *no.* 19.
C. canadensis. *Nutt. Gen.* 1. *p.* 46.
C. cinnoides. *Florul. Cestr. p.* 10. Not of *Muhl.* nor *Bart. Phil.*
Agrostis glaucа. *Muhl. Catal. p.* 10. *Ejusd. Gram. p.* 76.
Arundo coarctata. *Torr. Fl.* 1. *p.* 94. *Bigel. Bost. p.* 39. Also, *Eat. Man. p.* 31.

COARCTATE, OR CONDENSED CALAMAGROSTIS.

Whole plant glaucous. *Root* perennial. *Culm* erect, 2 to 4 feet high. *Leaves* linear-lanceolate, nerved, somewhat pilose and scabrous, nerves and keel white: *sheaths* striate, sometimes pilose; *ligule* oblong, obtuse. *Panicle* terminal, stiffly erect, densely contracted; branches short, aggregated. *Glumes* nearly equal, lanceolate, with a subulate acumination, margins often purple; the lower one 1-nerved, the upper 3-nerved. *Paleæ* nearly equal, scabrous, something shorter than the glumes; lower one 5-nerved, bifid at apex, with a short, straight awn, a

little below the tip, the upper one with two keels, and a stipitate pappus at base. *Hairs*, or general pappus, surrounding the base of the paleæ, about as long as the floret, sometimes a little shorter. *Seed* villous, with a hairy tuft at the apex.

Hab. Wet places, in the Mica-slate range: frequent. *Fl.* August. *Fr.* Sept.

Obs. The *stipitate pappus*, at the base of the *upper palea*, has been supposed, with much plausibility, to be the rudiment of an *aborlive floret*.

39. PHALARIS, *L.* *Nutt. Gen.* 73.

[Greek, *Phalos*, brilliant; on account of its smooth shining seeds.]

Spikelets 1-flowered. *Glumes* 2, nearly equal, ovate, or lanceolate, boat-shaped, nerved. *Paleæ* 2, shorter than the glumes, awnless, coriaceous, coating the seed; each with an external *accessory palea*, or *rudiment* of an abortive floret, at base.

1. P. ARUNDINACEA, *L.* Panicle oblong; contracted, lobed, or with the spikelets clustered and somewhat secund on the branches; glumes scabrous; rudiments pilose. *Muhl. Gram. p.* 89. SPECIM. *Gray, Gram.* 1. *no.* 39.
P. americana. *Torr. Fl.* 1. *p.* 100. *Ejusd. Comp p.* 54. *Bigel. Bost. p.* 30. *Eat. Man. p.* 258. *Beck, Bot. p.* 392. Not of *Elliott.*
Arundo colorata. *Willd. Sp.* 1. *p.* 457. *Ait. Kew.* 1. *p.* 174.
Calamagrostis colorata. *Nutt. Gen.* 1. *p.* 46. *Bart. Phil.* 1. *p.* 44. Also, *Beck, Bot. p.* 401.
REED-LIKE PHALARIS.

Root perennial. *Culm* 3 to 4 or 5 feet high. *Leaves* lanceolate, keeled, nerved, scabrous on the margin, of a deep green color: *sheaths* striate, smooth; *ligule* ovate, obtuse. *Panicle* glaucous, oblong, erect, at first contracted, finally a little spreading; *spikelets* glomerate and rather secund on the branches. *Glumes* compressed at apex, acute or acuminate, 3-nerved, whitish, nerves green, keel scabrous. *Paleæ* nearly equal, shorter than the glumes, pilose with appressed hairs, somewhat coriaceous and shining; the lower one ovate, a little tumid. The *rudiments*, or *accessory paleæ*, small, linear, fringed with white hairs about one third the length of the floret. *Anthers* yellow. *Scales* lance-ovate, acute, entire. *Seed* obovate, dark brown.

Hab. Swampy ditches and rivulets: frequent. *Fl.* June. *Fr.* July.

Obs. The *var. picta*, a foreign grass, with striped leaves—commonly called *ribband-grass*—is frequent in our gardens. Although our plant approaches *Calamagrostis*, in habit, it is undoubtedly, I think, a true *Phalaris*. It is, however, very distinct from the P. *americana*, of *Elliott*: of which I have received good specimens from my friend Mr. CURTIS, of Wilmington, N. Carolina. When the panicles of P. *arundinacea* first appear, they have some resemblance to those of *Dactylis glomerata*, or Orchard-grass: but I believe the plant is far inferior to Dactylis, in value, and is too much of an aquatic for culture, even if it merited it. One other native species is known, in the Southern States; and the P. *canariensis* is said to be partially naturalized, about New York.

40. ANTHOXANTHUM, *L.* *Nutt. Gen.* 71.

[Greek, *Anthos*, a Flower, and *Xanthos*, yellow; from the color of its spikes.]

Glumes 2, unequal; the upper one larger, enclosing the florets. *Florets* 3, in each spikelet; the central one *perfect*; the two lateral ones *neuter*, or consisting of mere *accessory paleæ*. *Paleæ* of the *neuter*

florets single; one with a dorsal awn, the other with an awn near the base. *Paleæ* of the *perfect floret* 2, nearly equal, short, awnless. *Stamens* 2.

1. A. ODORATUM, *L.* Panicle contracted into an oblong spike: spikelets subpedunculate, pubescent. *Beck, Bot. p.* 402. Icon, *Ell. Sk.* 1. *tab.* 1. *f.* 1. (indifferent.) Specim. *Gray, Gram.* 1. *no.* 41.

Odorous Anthoxanthum. *Vulgò*—Sweet-scented Vernal Grass. *Gallicè*—Flouve odorante. *Germanicè*—Das Ruch gras.

Root perennial. *Culm* erect, 12 to 18 inches high, rather slender. *Leaves* linear-lanceolate, shortish, striate, pubescent: *sheaths* nerved, sulcate; *ligule* elongated, membranaceous. *Panicle* contracted into an oblong, or ovoid-cylindric spike, becoming yellow when mature; *spikelets* somewhat fascicled, on short peduncles. *Glumes* very unequal, membranaceous, pubescent. *Palea* of the *perfect floret* very short, obtuse, nearly equal, smooth and shining, the lower one much broader. *Paleæ* of the lateral, or *neuter florets*, single, linear-oblong, ciliate on the margins; one of them with a geniculate awn from near the base, more than twice as long as the palea; the other with a straight awn, about as long as the palea, inserted on the back near the summit. *Stamens* 2; *anthers* large. *Stigmas* plumose, white. *Seed* oblong, blackish, shining.

Hab. Meadows, and borders of woodlands: common. *Fl.* May—June. *Fr.* July.

Obs. Introduced from Europe, and extensively naturalized. It is remarkable for having but 2 stamens,—and for emitting a fragrant odor, when cut and partly dry: But it is one of those grasses which rather belong to a thin soil,—and is not considered very valuable, here. It is the only species of the genus which has found its way to the U. States.

§ 2. Aveneæ—*Oat-grass Groupe.*

Spikelets *few-flowered.* Upper florets *generally pedicellate, and with* awn-like processes, *or* abortive rudiments, *between the upper and lower ones.*

41. AIRA. *L. Nutt. Gen.* 90.

[Greek, *Aira*, a deadly instrument; originally applied to a poisonous plant.]

Spikelets 2-flowered; the florets without an abortive rudiment between them. *Glumes* 2, membranaceous and shining, a little unequal, about as long as the florets. *Paleæ* nearly equal, pilose at base; the lower one lacerate or many toothed at apex, and awned on the back near the base.

1. A. FLEXUOSA, *L.* Leaves setaceous, smooth; panicle loose, spreading, trichotomously branched; branches smoothish, flexuose; awns geniculate, longer than the paleæ. *Beck, Bot. p.* 402. Specim. *Gray, Gram.* 1. *no.* 43.

Flexuose Aira.

Root perennial. *Culm* 1 to 2 feet high, glabrous. *Leaves* principally radical, or near the base of the culm, involute, setaceous, glabrous, 3 to 6 or 8 inches long; *sheaths* deeply striate, somewhat scabrous; *ligule* oblong, truncate. *Panicle* capillary, lax, trichotomously branched; branches long, somewhat flexuose, nearly smooth. *Glumes* membranaceous, white, oblong-lanceolate, very acute, about as

long as the florets *Florets* both sessile, pilose at base. *Lower palea* with an awn near the base, which is somewhat geniculate in the middle, and one third to one half longer than the palea.

Hab. Dry, rocky banks: R. Strode's: not common. *Fl.* June. *Fr.* July.

Obs. I think this species is very rare, here: and my Chester County specimens, although sanctioned by high authority, do not compare well with the undoubted plant. They look too much like the following species.

2. A. CESPITOSA, *L.* Leaves flat, scabrous; panicle finally diffuse, pyramidal; branches scabrous; awns straight, about as long as the palea. *Beck, Bot. p.* 402. SPECIM. *Gray, Gram.* 2. *no.* 115.
A. ambigua? *Mx. Am.* 1. *p.* 61. Also? *Pers. Syn.* 1. *p.* 77.
Also? A. aristulata. *Torr. Fl.* 1. *p.* 132. *Ejusd. Comp. p.* 64. *Eat. Man. p.* 10.
CESPITOSE AIRA.

Root perennial. *Culm* 2 to 3 feet high, cespitose or growing in tussocks, glabrous. *Leaves* narrow, linear, acute, nerved and scabrous on the upper surface, smooth beneath: *sheaths* smooth: *ligule* elongated, acuminate. *Panicle* capillary, oblong, at first contracted, finally diffuse; branches semi-verticillate, acutely scabrous. *Glumes* generally of a bluish color, rather obtuse, shorter than the florets. *Florets* pilose at base: the upper one on a hairy pedicel. *Lower palea* with a scabrous awn near the base, which is straight, and scarcely as long as the palea.

Hab. Moist places on the Serpentine rock: abundant. *Fl.* May. *Fr.* July.

Obs. These *Airas* are dry, wiry grasses, of little or no value to the agriculturist. Two or three additional species are enumerated in the U. States.

42. KOELERIA. *Pers. Nutt. Gen.* 104.

[Named in honor of M. *Koeler*, a German Botanist.]

Spikelets compressed, 2 or 3-flowered. *Glumes* 2, shorter than the florets, unequal, the lower one much narrower. *Upper floret* pedicellate, with a short, awn-like *rudiment*, at the base of the upper palea. *Lower palea* awnless, or sometimes awned.

1. K. PENNSYLVANICA, *DC.* Panicle long, very slender, rather loose; spikelets shining, the terminal ones 3-flowered. *Beck, Bot. p.* 407.
Aira melicoides? *Mx. Am.* 1. *p.* 62. *Pers. Syn.* 1. *p.* 77. *Pursh, Am.* 1. *p.* 76.
A. mollis. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 82. *Nutt. Gen.* 1. *p.* 62. *Ell? Sk.* 1. *p.* 154.
Also? A. triflora. *Ell. Sk.* 1. *p.* 153.
A. pallens. *Florul. Cestr. p.* 11. Not of *Muhl.*
PENNSYLVANIAN KOELERIA.

Root perennial, fibrous. *Culm* 2 to 3 feet high, smooth. *Leaves* short, lanceolate, flat, membranaceous; lower ones softly pubescent, smooth, upper ones scabrous: *sheaths* glabrous, or pubescent; *ligule* lacerate. *Panicle* 4 to 6 or 8 inches long, very slender, sometimes almost filiform, branches rather loose; *spikelets* not crowded, generally 2-flowered, a little compressed, and of a pale yellowish green color. Lower *glume* narrow, linear, acute; upper one oblanceolate, 3-nerved, obtuse, or obscurely pointed. *Upper floret* pedicellate; the terminal spikelet mostly

producing a third pedicellate floret. Lower *palea* subcoriaceous, awnless, upper one membranaceous.

Hab. Moist woodlands: frequent. *Fl.* May. *Fr.* July.

Obs. This plant was mistaken for the awnless *Var.* of *Aira pallens, Muhl.* when my Catalogue was published. I am now satisfied, by an inspection of *Muhlenberg's* Herbarium, that it is the A. *mollis*, of that author;—I suspect it is also the A. *triflora*, of *Ell.*—though I observe Dr. *Torrey* makes the latter a synonym of A. *truncata*.

2. K. TRUNCATA, *Torr.* Panicle oblong, contracted; branches short, erect; spikelets in clustered racemes, all 2-flowered. *Beck. Bot. p.* 408.
SPECIM. *Gray, Gram.* 1. *no.* 44.
Holcus striatus? *Willd. Sp.* 4. *p.* 934.
Aira obtusata. *Mx. Am.* 1. *p.* 62. *Pers. Syn.* 1. *p.* 77. *Pursh, Am.* 1. *p.* 76. *Nutt. Gen.* 1. *p.* 62. *Bart. Phil.* 1. *p.* 57. *Ell. Sk.* 1. *p.* 153. Also, *Eat. Man. p.* 10.
A. truncata. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 83. *Bigel. Bost. p.* 31. *Lindl. Ency. p.* 58.
TRUNCATE KOELERIA.

Root perennial. *Culm* about 2 feet high, smooth. *Leaves* lance-linear, slightly scabrous, pubescent: *sheaths* striate, softly pilose (glabrous, *Muhl.*); *ligule* short, retuse, laciniate. *Panicle* 3 to 4 or 5 inches long, contracted, with the branches short, nearly erect, and the spikelets rather densely crowded. The *florets* appear acuminate, by reason of the paleæ projecting beyond the glumes. *Glumes* of nearly equal length; the lower one linear, the upper one broad-ovate, very obtuse, or truncate. *Paleæ* nearly equal; lower one subcoriaceous, awnless, upper one membranaceous. *Seed* linear, compressed.

Hab. Fields, and open woodlands: frequent. *Fl.* June. *Fr.* July.

Obs. I have specimens of *Aira obtusata, Mx.*—one from Georgia, by Dr. *Baldwin*, the other from N. Carolina, by Mr. *Curtis*; and although the panicle in the southern specimens, is larger than in our plant, I can perceive no material difference in the general character. This is certainly nearly allied to the preceding species; but is readily distinguished by its more dense, glaucous or ash-colored panicle, and its very obtuse or truncate glumes, and somewhat tumid florets. The specimens, in my copy of Dr. *Gray's* work, do not agree well with our K. *truncata*; but appear rather to be a variety of K. *pennsylvanica*. Three other species are enumerated in the U. States.

43. AVENA. *L. Nutt. Gen.* 105.

[A classical Latin name; applied to this genus.]

Spikelets 2 to 5-flowered. *Glumes* 2, loose and membranaceous, generally nearly equal, longer than the florets. *Paleæ* 2, mostly hairy at base; the lower one bifid, with a contorted or geniculate awn on the back.

1. A. ELATIOR, *L.* Panicle oblong, somewhat contracted, at length spreading; spikelets 2-flowered; the lower floret staminate, awned; the upper one perfect, mostly awnless. *Beck, Bot. p.* 403.
Arrhenatherum avenaceum. *Beauv. Torr. Fl.* 1. *p.* 130. *Ejusd. Comp. p.* 63. Also *Eat. Man. p.* 29.
Holcus avenaceus. *Bit. Kew. p.* 431. *Lindl. Ency. p.* 860.
TALLER AVENA. *Vulgò*—Oat-grass. Grass of the Andes.

Root perennial, creeping, nodose. *Culm* about 3 feet high, glabrous. *Leaves* linear-lanceolate, scabrous on the margin and upper surface; *sheaths* striate, smooth: *ligule* short, retuse. *Panicle* linear-oblong, contracted, finally spreading and somewhat nodding; branches short, semiverticillate. *Glumes* unequal, lower one shorter than the florets. *Lower palea* of the *staminate floret* with a long contorted awn near the base. *Lower palea* of the *perfect floret* mostly with a short straight awn near the apex; *upper palea* with a short *awn-like rudiment* at base.

Hab. Cultivated grounds: not common. *Fl.* May. *Fr.* July.

Obs. This plant was introduced to the notice of some of our farmers, a few years ago, by the high-sounding name of "*Grass of the Andes*;" but it did not long command their attention. It is, however, partially naturalized in several neighborhoods. I received my specimens from Gen. *Hartman's* farm, in Pikeland.

2. A. PALUSTRIS, *Mx.* Panicle rather loose and nodding; spikelets 2 to 3-flowered; middle floret abortive, upper one pedicellate, with the lower palea bicuspidate, and awned below the tip; lower floret mostly awnless. *Muhl. Gram. p.* 186.

Trisetum palustre. *Torr. Fl.* 1. *p.* 126. *Ejusd. Comp. p.* 62. *Beck, Bot. p.* 403. *Eat. Man. p.* 373.

T. pratense. *Florul. Cestr. p.* 11. Also? *Pursh, Am.* 1. *p.* 76. Not of *Pers.*

Aira pallens. *Ell. Sk.* 1, *p.* 151. Also, *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 84. Not of *Florul. Cestr.*

MARSH AVENA.

Root perennial. *Culm* 2 to 3 feet high, slender, glabrous, nodes contracted. *Leaves* lance-linear, narrow, 2 to 4 inches long, nerved, slightly scabrous (glabrous, *Muhl. Torr.*): *sheaths* striate, glabrous; *ligule* oblong, lacerate, or fimbriate. *Panicle* yellowish green, oblong, rather loose, nodding, often somewhat secund; branches semiverticillate. *Spikelets* all pedunculate, much compressed, generally 2-flowered, sometimes with an intermediate abortive floret. *Glumes* nearly equal, shorter than the florets, 3-nerved, acute or mucronate, scabrous on the keel, the upper one a little longer. *Superior floret* on a hairy pedicel; the *lower palea* acuminate, bicuspidate, with a contorted or bent awn, as long as the floret, inserted below the tip; the *upper palea* shorter, with a pedicel or awn-like rudiment at base, two thirds the length of the palea. *Lower floret* mostly awnless; sometimes the lower palea terminates with two minute bristly teeth, and a short, straight, slender awn.

Hab. Swampy meadow grounds: frequent. *Fl.* June. *Fr.* July.

Obs. From the best examination I could give this plant, I have persuaded myself that it properly belongs to *Avena.*

3. A. SATIVA, L. *Panicle loose; spikelets pendulous, 2-flowered; both florets perfect, the lower one mostly awned; paleæ subcartilaginous, closely embracing the seed.* Willd. Sp. 1. p. 446.

COMMON AVENA. Vulgò—*Oats. Common Oats.*

Gallicè—*Avoine cultivée.* German.—*Der Hafer.* Hispan.—*Avena.*

Root *annual.* Culm 2 *to* 4 *feet high, smooth.* Leaves *lanceolate, nerved, scabrous:* sheaths *striate, smooth, rather loose;* ligule *lacerate.* Panicle *loose, somewhat nodding,* spikelets *all pedunculate, pendulous.* Glumes *nearly equal, longer than the florets, loose and membranous. Lower floret mostly awned on the*

back; upper one awnless, with an awn-like process, or pedicel, at the base of the upper palea, *bearing membranaceous* rudiments of paleæ, *at its summit.* Seed *closely invested by the smoothish, shining, subcartilaginous* paleæ.

Hab. *Cultivated fallow grounds: common.* Fl. *July.* Fr. *August.*

Obs *This is extensively cultivated.—chiefly as food for horses. It is usually sown as a fallow crop, after* Indian Corn. *It succeeds better than* Barley *in a thin soil; and is therefore frequently employed, in the rotation of crops, when* Barley *would have been preferred, had the land been good. The* seed *is usually sown the latter end of April. I have observed* a Variety,—*cultivated about* Easton *in this State, and in* New Jersey, *opposite,—with more* erect, coarctate, *and rather* secund panicles, *with the florets generally awnless; which is said to be more productive, and to yield a heavier grain, than the common sort. The* A nuda, *called* "skinless oats,"—*with* 3 *to* 5-flowered spikelets, *and* seed loosely covered by the paleæ,—*has been partially cultivated by the curious, on account of its superior fitness for making oat meal, as an article of diet for the sick. One or two other species of* Avena *are enumerated in the U. States.*

§ 3. Bromeæ—*Brome-grass Groupe.*

Spikelets *many-flowered, oblong.* Florets *sessile, closely and distichouly arranged on the rachis.*

† *Spikelets in a racemose panicle.*

44. DANTHONIA. *DC. Nutt. Gen.* 100.

[Named in honor of M *Danthoine*, a French Botanist.]

Spikelets 2 to 7-flowered. *Glumes* 2, nearly equal, longer than the florets, loose and somewhat expanding. *Paleæ* hairy at base; the lower one bifid at apex, with a twisted awn between the segments; the upper one obtuse, entire.

1. D. spicata, *Roem. & Schult.* Leaves subulate; lower sheaths pilose at throat; panicle simple, spike-form; spikelets about 7-flowered; lower palea hairy. *Beck, Bot. p.* 405. Specim. *Gray, Gram.* 2. *no.* 117.

Avena spicata. *Willd. Sp.* 1. *p.* 453. *Pursh, Am.* 1. *p.* 86. *Muhl. Catal. p.* 13. *Ejusd. Gram. p.* 183. *Bigel. Bost. p.* 32. Not? of *Elliott.*

Spiked Danthonia. *Vulgò*—Oat-grass. Wild Oats.

Root perennial? *Culm* 12 to 18 inches high, slender, somewhat cespitose, often a little decumbent. *Lower leaves* numerous, 3 to 6 inches long, flat, or involute, often pilose, scabrous near the apex: *culm leaves* short, erect, subulate; *sheaths* striate, pilose at throat, and also at base just above the nodes; *ligule* very short, ciliate. *Panicle* short, erect, spike-form, sometimes the lower branches divided; *spikelets* 3 to 5, occasionally 10 or 15,—each 6 or 7-flowered, distichous. *Glumes* a little longer than the florets, lanceolate, 5-nerved. *Lower palea* ovate, incurved, subcoriaceous, obscurely 7-nerved, pilose, with a scarious margin, which is extended into two lance-ovate teeth, at the apex: *awn* about twice as long as the palea, flat at base and spirally twisted. *Upper palea* lance-ovate, membranaceous, white, with a green nerve at each border, and finely ciliate on the margin. *Scales* collateral, oblong, obtuse, or truncate. *Seed* oblong, compressed, incurved, longitudinally striate or rugose, the apex slightly 2-horned.

Hab. Dry banks: borders of woods, and road sides: frequent. *Fl.* June. *Fr.* July.

Obs. This plant resembles *Avena*, in habit, but is more nearly allied to *Bromus*. Notwithstanding *Muhlenberg's* remark,—"*bonum pabulum*,"—I consider it but a poor grass; and very much confined to sterile soils. I have specimens of D. *sericea*, *Nutt.* (*Arena glumosa*, *Mx.* and *Muhl.* A. *spicata*, *Ell.*) which I collected at Suffolk, Virginia: and which, if not specifically distinct, certainly present a strongly marked *variety*. Admitting them to be distinct, they are the only known species in the U. States.

† † *Spikelets loose Panicled.*

45. BROMUS. *L. Nutt. Gen.* 102.

[Greek, *Broma*, Food: *Bromos* was an ancient name of a species of wild oats.]

Glumes 2, shorter than the lower florets. *Lower palea* bifid at apex, usually awned a little below the tip: *upper palea* conduplicate, ciliate on the margin.

1. B. SECALINUS, *L.* Panicles spreading, lower branches a little subdivided; spikelets ovate-oblong, compressed, 8 to 10-flowered; florets distinct, longer than the flexuose awns. *Beck, Bot. p.* 408.

RYE BROMUS. *Vulgò*—Cheat. Chess.

Root annual. *Culm* 3 to 4 feet high; nodes pubescent, swelled (especially the lower half). *Leaves* linear-lanceolate, nerved, scabrous and pilose on the upper surface: *sheaths* nerved, smooth; *ligule* oblong, retuse, laciniate-dentate. *Panicle* 4 to 6 inches long; branches semiverticillate, nearly simple, scabrous and pubescent. *Spikelets* at length nodding; florets a little remote at base, so as to appear distinct on the flexuose rachis. *Glumes* lance-ovate, unequal, the lower one shorter, 5-nerved, sometimes mucronate; the upper one 7-nerved, obtuse or emarginate. *Lower palea* lance-ovate, obscurely 7-nerved, slightly pubescent near the apex; *awn* mostly shorter than the floret, flexuose, (sometimes wanting, or a mere rudiment). *Upper palea* linear, awnless, pectinate-ciliate on the margin. *Seed* oblong, sulcate above, closely embraced by the lower palea, and containing the upper one, deutled, in the groove.

Hab. Cultivated grounds; among wheat and rye: frequent. *Fl.* June. *Fr.* July.

Obs. This well known, troublesome grass, is a naturalized foreigner; and obstinately accompanies our crops of Wheat and Rye. Frequently when the wheat has been injured by the winter, or other cause, the Bromus is very abundant; and many farmers are so little acquainted with the laws of nature—and therefore prone to absurd mistakes,—that they imagine the wheat has been *transformed* into Bromus, or Cheat. This vulgar error also prevails among the peasantry of Europe: But in the old world, they think the wheat is transmuted into *Lolium temulentum*, or Darnel,—quite a distinct grass from Bromus,—and which is yet rare in the U. States.

2. B. ARVENSIS? *L.* Panicle erect, somewhat spreading; spikelets lanceolate, compressed, 7 or 8-flowered; florets imbricated, compressed, smoothish, about as long as the straight awn. *Hook. Brit. Flora. p.* 51.

FIELD BROMUS.

Root annual. *Culm* about 2 feet high, striate, smooth; *nodes* nearly black, not swelled, covered with a short retrorse pubescence. *Leaves* lance-linear, hairy on both sides, scabrous on the margin: *sheaths* nerved, softly and retrorsely pilose; *ligule* oblong, lacerate. *Panicle* rather erect; branches often simple, sometimes

subdivided, at length spreading, scabrous. *Spikelets* about 7-flowered, ovate-lanceolate, at first erect, finally somewhat nodding, smoothish, or with a very short roughish pubescence under a lens. *Glumes* unequal, the lower one shorter and much narrower. *Florets* closely imbricated. *Lower palea* lance-oval, 9-nerved, margin membranaceous, two marginal nerves approximated; *awn* straight, about as long as the floret. *Upper palea* lance-linear, obtuse, membranaceous, bordered with a green nerve, and pectinate-ciliate on the margin.

Hab. Meadows: W. Chester; near Wynn's meadows: frequent. *Fl.* June *Fr.* July.

Obs. This species has also been introduced. In some respects,—particularly in the size and general character of the panicle,—it approaches B. *mollis;* and it may possibly be the plant so named by the American Botanists: But on comparing it with specimens, of both species, which I have received from Europe, I am inclined to think our plant is the B. *arvensis*; and in this opinion I am fortified by my friend Dr. Pickering.

3. B. pubescens, *Muhl.* Panicle loose, nodding; spikelets lanceolate, subterete, 8 to 12-flowered; florets pubescent, rather longer than the straight awn. *Beck, Bot. p.* 408.
Pubescent Bromus.

Root perennial. *Culm* 3 to 4 feet high, striate, smooth above, somewhat pilose below; *nodes* black. *Leaves* lanceolate, smooth beneath, pilose above, scabrous on the margin: *sheaths* nerved, lower ones retrorsely pilose, upper ones smooth; *ligule* short, laciniate-dentate. *Panicle* loose, finally nodding; branches by 2's, or 3 to 5, slender, subdivided, flexuose, setaceously scabrous. *Spikelets* oblong-lanceolate, about 10-flowered. *Glumes* unequal, ciliate on the keel; the lower one smaller, linear-lanceolate, (almost subulate,) 1-nerved, upper one 3-nerved. *Florets* at first imbricate, finally rather open. *Lower palea* lanceolate, 7-nerved, covered with appressed hairs; *awn* nearly straight, scabrous, rather shorter than the floret. *Upper palea* linear, membranaceous, bordered with a green nerve, and ciliate on the margin.

Hab. Woodlands, and borders of woods: frequent. *Fl.* June. *Fr.* July.

Obs. It is doubtful whether the B. *ciliatus*, *Muhl.* grows in Chester County. The plant so called in *Florul. Cestr.* I believe is not distinct from B. *pubescens*,—in which the florets are often conspicuously ciliate. The Brome grasses would probably yield a good fodder; but, with the exception of *Cheat*—which is much disliked on account of its association with wheat—they are very little known, or thought of, here. Two or three other species are enumerated in the U. States.

46. FESTUCA. *L. Nutt. Gen.* 101.

[A Latin name for the shoot, or stalk, of a plant; applied to this genus.]

Spikelets oblong, more or less terete, at length compressed, acute at each end; florets sub-terete, mostly deciduous. *Glumes* unequal, shorter than the lower florets, keeled, acute. *Paleæ* lanceolate; the lower one acuminate, or awned at the extremity, closely embracing the seed.

1. F. tenella, *Willd.* Culm filiform; leaves setaceous; panicle simple, spikeform, rather secund; spikelets about 7-flowered; awns shorter than the subulate florets. *Beck, Bot. p.* 405. Specim. *Gray, Gram.* 1. *no.* 47.
F. bromoides. *Mx. Am.* 1. *p.* 66. Not of *Willd.* nor *Pers.*
Little, or Slender Festuca.

Root annual. *Culm* 6 to 12 inches high, very slender, erect, geniculate at base, often growing in bunches. *Leaves* linear, setaceous, nerved, involute, erect, 1 to 2 or 3 inches long: *sheaths* nerved, slightly pubescent; *ligule* short, laciniate-dentate. *Panicle* 2 to 4 inches long, simple, racemose or spikeform, somewhat secund, rachis angular, lower branches in pairs. *Spikelets* 3 to 9-flowered, (usually 5 to 7-flowered,) when old becoming brown. *Glumes* nearly equal, subulate, very acute. *Florets* distinct, a little distant, and at length spreading. *Lower palea* scabrous, sub-coriaceous, linear-lanceolate, involute, not keeled, acuminate, generally terminating in an awn about one third the length of the floret. *Upper palea* linear, acuminate, membranaceous, with a green nerve, or keel, at each margin. *Seed* brown, linear, sulcate on the upper side.

Hab. Dry, sterile banks; borders of woods: frequent. *Fl.* June. *Fr.* July.

Obs. This is a slender, wiry little species, of no value to the agriculturist; and pretty much confined to sterile soils.

2. F. ELATIOR, *L.* Panicle much branched, loose and rather spreading, nodding; spikelets ovate-lanceolate, 4 to 6-flowered; lower paleæ acuminate, or mucronate. *Beck, Bot. p.* 406. Not? of *Willd. Pers. Muhl.* nor *Nutt.*

Bromus littoreus? *Willd. Sp.* 1. *p.* 433. *Pers. Syn.* 1. *p.* 96.

TALLER FESTUCA.

Root perennial, creeping. *Culm* 3 to 4 or 5 feet high, smooth. *Leaves* lanceolate, smooth, scabrous on the margin, 9 to 15 inches long: *sheaths* nerved, smooth, loose; *ligule* very short. *Panicle* 4 or 5 to 10 inches long, generally nodding; branches mostly in pairs, compressed or angular, margined and scabrous. *Spikelets* ovate-lanceolate, 4 to 6-flowered, racemose on the branches. *Glumes* unequal; lower one shorter, linear-lanceolate, keeled, upper one lanceolate, obscurely 3-nerved, with a scarious margin. *Lower palea* lanceolate, acute or mucronate, obscurely 5-nerved. *Upper palea* linear, white, with a green nerve, or keel, at each doubled or inflexed margin. *Seed* oval, concave on the upper side.

Hab. Wet meadows and low grounds: frequent. *Fl.* June. *Fr.* July.

Obs. Supposed to be introduced. It is usually a larger plant than the following, (to which it is nearly allied.)—but is not so valuable, neither is it so common; being mostly confined to low grounds, or ditch banks in swampy meadows.

3. F. PRATENSIS, *Huds* Panicle branched, rather erect and secund; spikelets oblong, or linear-lanceolate, 7 to 9-flowered; lower palcæ scarious at apex and rather acute, never mucronate. *Beck, Bot. p.* 406.

SPECIM. *Gray, Gram.* 2. *no.* 126.

F. elatior. *Florul. Cestr. p.* 13. *Willd.? Sp.* 1. *p.* 425. *Pers? Syn.* 1. *p.* 94. *Muhl? Catal. p.* 12. *Ejusd. Gram. p.* 164. *Bigel.? Bost. p.* 36.

MEADOW FESTUCA. *Vulgò*—Fescue Grass.

Gallicè—Festuque des Prés. *Germanicè*—Schwingel.

Root perennial. *Culm* 2 to 3 feet high, glabrous. *Leaves* lanceolate, nerved, smooth, shining beneath, scabrous on the margin, 4 to 6 or 8 inches long: *sheaths* nerved, smooth; *ligule* very short, or obsolete. *Panicle* 4 to 6 or 8 inches long, somewhat secund, mostly erect; branches generally single, often subdivided. *Spikelets* linear-lanceolate, about 7-flowered, racemose on the branches, smooth, often purplish. *Glumes* unequal; lower one keeled, upper one larger, 3-nerved, scarious on the margin. *Lower palea* ovate-lanceolate, scarious on the margin,

obscurely 5-nerved, somewhat acute, but not acuminate nor mucronate. *Upper palea* lanceolate, white, with a green keel near each margin, which is doubled or folded in.

Hab. Fertile fields, and meadows: common. *Fl.* June. *Fr.* July.

Obs. This was mistaken for the preceding, in my Catalogue; and seems to have been occasionally confounded with it, by others. Indeed it is so closely allied to F. *elatior*, that it may be doubted whether it is more than a *variety*. It is, however, a much more valuable grass: and although not cultivated, has found its way into all our best meadows and pastures. It is also a naturalized foreigner.

4. F. NUTANS, *Willd.* Panicle slender, diffuse, at length nodding; branches long, in pairs, naked below; spikelets lance-ovate, about 3-flowered; florets smooth, awnless, and nearly nerveless. *Beck, Bot. p.* 406. SPECIM. *Gray, Gram.* 2. *no.* 125.
NODDING FESTUCA.

Root perennial. *Culm* erect, about 3 feet high, rather slender, simple, glabrous; nodes blackish. *Leaves* linear-lanceolate, strongly nerved, somewhat scabrous, 6 or 8 to 12 inches long, deep green; *sheaths* nerved, grooved, often pilose (glabrous, *Muhl.*); *ligule* short, serrate. *Panicle* slender and very loose, few-flowered; lower branches in pairs, upper ones single. *Spikelets* 2 to 5-flowered, (usually 3-flowered,) on subdivisions, or peduncles, near the extremity of the long, slender, scabrous branches. *Florets* rather tumid. *Glumes* unequal, lanceolate, acuminate, scabrous on the keel. *Paleæ* coriaceous, smooth; lower one lance-ovate, mostly acute, nerveless, or very obscurely 5-nerved, margin not scarious; upper one lanceolate, as long as the lower, bidentate at apex, the margin folded in, forming a keel at each border,

Hab. Moist woodlands: West Chester; Brandywine: frequent. *Fl.* June. *Fr.* July.

Obs. This is allied to POA; but the *paleæ* are not scarious on the margin. It is not a grass of much value,—being rather solitary in its habit, and chiefly confined to woodlands. Eight or nine additional species have been described in the United States.

47. GLYCERIA. *Br. Torr. Fl.* 1. *p.* 103.

[Greek, *Glykys*, sweet; on account of the sweet taste of the seeds.]

Spikelets long, linear, many-flowered. *Glumes* 2, unequal, membranaceous, nerveless, shorter than the lower florets. *Lower palea* herbaceous, embracing the *upper*, which is membranaceous, somewhat conduplicate, and bidentate at apex. *Scales* collateral, connate, truncate.

1. G. FLUITANS, *Br.* Panicle long, slender, slightly branched; spikelets long, linear, appressed, about 10-flowered; florets distinct, obtuse; lower palea 7-nerved, eroded or many-toothed. *Beck, Bot. p.* 412. SPECIM. *Gray, Gram.* 1. *no.* 48.
Festuca fluitans. *Willd. Sp.* 1. *p.* 426. *Mx. Am.* 1. *p.* 66. *Pers. Syn.* 1. *p.* 94. *Muhl. Catal. p.* 12. *Ejusd. Gram. p.* 166. *Pursh, Am.* 1. *p.* 84. *Nutt. Gen.* 1. *p.* 73. *Bart. Phil.* 1. *p.* 66. *Bigel. Bost. p.* 37. *Florul. Cestr. p.* 13.
Poa fluitans. *Ait. Kew.* 1. *p.* 154. *Ell. Sk.* 1. *p.* 163.
FLOATING GLYCERIA. *Vulgò*—Manna Grass.
Gallicè—Manne de Prusse. *Germanicè*—Essbarer Schwingel.

Root perennial, creeping. *Culm* 4 to 6 feet high, compressed, erect or ascending, glabrous. *Leaves* lanceolate, striate, smooth beneath, scabrous on the margins and upper surface: *sheaths* nerved, smooth; *ligule* very large, oblong, membranaceous, tapering to a point, sometimes obtuse. *Panicle* 12 to 15 inches long, partly concealed in the sheath of the upper leaf, slender, branches mostly simple. *Spikelets* about an inch long, linear, nearly sessile, racemose on the branches, and appressed. *Glumes* membranaceous, nerveless. *Paleæ* nearly equal; lower one roughish, 7-nerved, very obtuse, many-toothed at apex; upper one somewhat conduplicate, emarginate or bidentate at the extremity, the margin folded in, forming a green keel at each border. *Seed* oblong, sulcate on the upper side.

Hab. Ponds, and wet places along Brandywine; frequent. *Fl.* Junc. *Fr.* July.

Obs. This stout aquatic grass is common to Europe and America. The seeds have a sweetish taste; and in some parts of the old world they are used in making soups and gruels, under the name of *Manna seeds*. Horses and Cattle are said to be fond of the plant. There is one other species described in the U. States.

48. TRICUSPIS. *Beauv. Torr. Fl.* 1. *p.* 118. Not of *Persoon.*
[Latin, *Tres*, three, and *Cuspis*, a point; alluding to the structure of the florets.]

Spikelets terete, tumid, about 5-flowered. *Glumes* 2, unequal, scarious, keeled, mucronate, shorter than the lower florets. *Lower palea* bifid at apex, and tricuspidate by the projecting keel and marginal nerves, the base and sides pilose; *upper palea* emarginate. *Scales* obtuse, entire.

1. T. SESLERIOIDES, *Torr.* Panicle loose, expanding; branches flexuose, smooth; spikelets ovate-lanceolate, nearly terete, purple, shining, 4 or 5-flowered. *Beck, Bot. p.* 407. SPECIM. *Gray, Gram.* 1. *no.* 51.
T. quinquefida. *Lindl. Ency. p.* 64.
Poa flava. *Willd. Sp.* 1. *p.* 390. *Pers. Syn.* 1. *p.* 90.
P. sesleroides. *Mx. Am.* 1. *p.* 68. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 149.
P. quinquefida. *Pursh, Am.* 1. *p.* 81. *Ell. Sk.* 1. *p.* 164.
Also? P. subverticillata. *Pers. Syn.* 1. *p.* 92.
Windsoria pœformis. *Nutt. Gen.* 1. *p.* 70. *Bart. Phil.* 1. *p.* 64. *Florul. Cestr. p.* 13.
W. sesleroides. *Eat. Man. p.* 396.

SESLERIA-LIKE TRICUSPIS. *Vulgò*—Tall Red-top.

Root perennial. *Culm* erect, 3 to 4 or 5 feet high, very hard and smooth. *Leaves* lanceolate, nerved, striate between the nerves, a little inclined to become involute, smooth beneath, pilose above: *sheaths* nerved, bearded at throat, upper ones smooth, those near the root often quite hairy; *ligule* very short, beardform. *Panicle* large, loose, usually purple, at first erect, finally spreading and somewhat nodding; branches alternate or in pairs, long, flexuose, smooth, pilose in the axils. *Spikelets* on short peduncles, alternate and rather distant, on the upper part of the branches, usually 4-flowered. *Glumes* scarious, unequal, ovate, mucronate. *Lower palea* hairy on the back, and especially on the margins, near the base, with 3 distinct nerves, which project and form the cusps; the middle cusp longest, the intermediate parts, (or bifid end of the palea,) together with the 3 cusps, forming a 5-toothed apex; *upper palea* minutely ciliate on the marginal keels. *Seed* oval, a little gibbous, slightly concave on the upper side, with two short diverging horns at apex.

Hab. Dry, sandy banks, and sterile old fields: frequent. *Fl.* August. *Fr.* Sept.

Obs. *Pursh* calls this "a most excellent grass," and says he has seen "most excellent crops" of it, in the mountain meadows of Pennsylvania, where they mow it twice a year. Such crops may possibly pass for "excellent" in *mountain* meadows; but they would not be so considered in Chester County. If Mr. *Pursh* has not misapprehended the fact, he is certainly mistaken in the character of the plant; for it is a dry, rigid grass, with unusually hard culms, and altogether unfit for making good hay. It is the only species of the genus in the U. States.

49. POA. *L.* *Nutt. Gen.* 96.

[Greek, *Poa*, herbage, or pasture; applied by way of eminence to this genus.]

Spikelets more or less ovate, compressed, mostly many-flowered. *Glumes* 2, shorter than the lower florets. *Paleæ* nearly equal, awnless, often with a villous web at base; lower one herbaceous, scarious on the margin. *Scales* ovate, acute, gibbous at base.

* *Florets webbed at base.*

1. P. PUNGENS, *Nutt.* Culm compressed; leaves linear, cuspidate; panicle nearly simple, spreading; spikelets lance-ovate, 3 or 4-flowered, crowded at the extremities of the branches; florets rather obtuse. *Beck, Bot. p.* 409.

P. flexuosa. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 148. Not of *Pers.*
P. cuspidata. *Bart. Phil.* 1. *p.* 61. *Florul. Cestr. p.* 12.
P. autumnalis. *Ell. Sk.* 1. *p.* 159.

PUNGENT, OR SHARP-POINTED POA.

Root perennial. *Culm* 1 to 2 feet high, compressed, striate, glabrous, somewhat cespitose. *Leaves* erect, keeled, striate, slightly scabrous on the margin, compressed and cuspidate at the end; radical ones long, linear; those on the culm generally 2, linear-lanceolate, very short: *sheaths* striate, somewhat scabrous, rather loose; *ligule* truncate, lacerate, sometimes abruptly acuminate. *Panicle* small, spreading below, contracted and almost racemose at summit; branches capillary, in twos or threes. *Spikelets* crowded near the extremities of the branches, 3 or 4 flowered. *Glumes* unequal, smooth: lower one keeled, acute, upper one 3-nerved, often bifid or bidentate at apex. *Florets* a little distant, slightly pubescent, with a villous web at base. *Lower palea* ovate-lanceolate, rather obtuse, 5-nerved, scarious at apex, and ciliate-pubescent on the keel: *upper palea* a little shorter, linear-lanceolate, conduplicate. *Seed* linear-oblong, concave on the upper side, 2-horned at apex.

Hab. Hilly woodlands: Brandywine: frequent. *Fl.* April. *Fr.* May.

Obs. This early-flowering species,—which by a singular misnomer is called P. *autumnalis* in Mr. *Elliott's* Sketch,—is very abundant on the shaded banks of the Brandywine, near Hillsdale Factory; but does not appear to extend much into the open fields, nor to be of much promise, as a constituent of our pastures.

2. P. PRATENSIS, *L.* Culm terete, smooth; leaves keeled, linear, abruptly acute; ligule short, truncate; panicle somewhat crowded, finally spreading; spikelets ovate, acute, about 4-flowered; florets acute. *Beck, Bot. p.* 409.

P. viridis. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 138. *Ell. Sk.* 1. *p.* 159. Also, *Pursh, Am.* 1. *p.* 79. *Nutt. Gen.* 1. *p.* 65. *Bart. Phil.* 1. *p.* 60. *Florul. Cestr. p.* 12. *Beck, Bot. p.* 410.

Meadow Poa. *Vulgò*—Spear grass. Green grass. Meadow grass. *Gallicè*—Paturin des Prés. *Germanicè*—Viehgras.

Root perennial, creeping. *Culm* erect, 1 to 2 and 3 feet high, terete, striate, smooth. Radical *leaves* often very long and numerous, (sometimes near 2 feet long,) deep green, linear, abruptly acute, slightly scabrous on the margin; those on the culm shorter than the sheaths: *sheaths* nerved, smooth; *ligule* short, obtuse crenate. *Panicle* rather crowded, at length expanding and pyramidal, jointed at the branches; branches 3 to 5 at each joint, semiverticillate, flexuose, somewhat scabrous. *Spikelets* pedicellate, a little crowded on the branches, 3 to 5 flowered. *Florets* acute, with numerous cobweb-like hairs at base. *Glumes* unequal, keeled, compressed, sharply acuminate. *Lower palea* lance-ovate, somewhat compressed, 5-nerved, acute, slightly scabrous; *upper palea* lance-linear, acuminate, scabrous on the two keels.

Hab. Fields, meadows and woodlands: very common. *Fl.* May—June. *Fr.* July.

Obs. This species varies considerably, in size and appearance, when growing in different soils and situations. In our best soils, the radical leaves are very long and luxuriant,—when it is known by the name of *Green grass*. This has by some Botanists been made a distinct species, under the name of P. *viridis*: But it is probably nothing more than a *variety*. It is, indeed, as *Muhlenberg* terms it, "*optimum pabulum*;" being decidedly the most valuable of all the grasses known in our pastures. It has not been found necessary to cultivate it, by sowing the seed; for when the land is duly prepared by lime and manure, it soon takes possession of the soil,—or *comes in*, as the farmers term it;—and supersedes the artificial grasses. In very poor land, it deteriorates so much that it would scarcely be recognized as the same plant. It is generally believed by the Botanists to be a naturalized foreigner.

3. P. trivialis, *L.* Culm and sheaths somewhat scabrous; ligule elongated, acuminate; panicle diffuse, scabrous; spikelets oblong-ovate, 2 to 3-flowered. *Beck, Bot. p.* 410.
P. stolonifera. *Muhl. Catal. p.* 11. *Ejusd. Gram. p.* 139.
P. nemoralis. *Florul. Cestr. p.* 12. Not of *Linn.*

Trivial Poa.

Root perennial. *Culm* 2 to 3 feet high, often geniculate and stoloniferous at base, somewhat scabrous retrorsely. *Leaves* pale green, lance-linear, (those of the root, or suckers, long and narrow) acute, scabrous on the margin: *sheaths* striate, slightly scabrous when rubbed upwards; *ligule* much elongated, the upper ones acuminate. *Panicle* loose, expanding: branches semiverticillate in about fives, sharply scabrous. *Spikelets* usually 2, sometimes 3-flowered. *Glumes* unequal, scabrous on the keel; lower one rather shorter, linear-lanceolate, very acute; upper one lanceolate, 3-nerved, with a broadish scarious margin. *Palea* unequal, nearly smooth; lower one longer, 5-nerved, scarious at apex.

Hab. Moist low grounds, and woodlands: frequent. *Fl.* June. *Fr.* July.

Obs. This species is also believed to be a foreigner; and is somewhat variable in appearance. It has much resemblance to the preceding, when growing in open grounds; but is far inferior in value,—and may be readily distinguished, by the *elongated ligule*, and retrorsely roughish culms. In the woods, it is often a weak stemmed, straggling plant. It is enumerated in my *Catalogue*, under the erroneous name of P. *nemoralis*:—a mistake into which I was led by the hasty opinion of a distinguished Botanist.

4. P. COMPRESSA, *L.* Culm decumbent or oblique, much compressed, smooth; paniele contracted, somewhat secund; spikelets ovate-oblong, 3 to 6-flowered. *Beck, Bot. p.* 410. SPECIM. *Gray, Gram.* 1. *no.* 59.

COMPRESSED POA. *Vulgò*—Blue grass. Wire grass.

Gallicè—Paturin applati. *Germanicè*—Rehwasen.

Root perennial, creeping. *Culm* 12 to 18 inches high, decumbent, nodose and radicating at base, much compressed, striate, smooth. *Leaves* short, linear, keeled, nerved, smooth, scabrous near the end, and, with the culm, of a bluish green: *sheaths* rather loose, striate, smooth; *ligule* short, obtuse. *Panicle* contracted, at first almost spiked, rather secund, finally a little expanding: branches by 2's and 3's, short, somewhat flexuose, scabrous. *Spikelets* generally 5 or 6-flowered, subsessile. *Glumes* nearly equal, acute, serrulate on the keel. *Lower palea* ovate-oblong, rather obtuse, (sometimes acute,) minutely roughish puberulent, generally dark purple near the apex, with a narrow, white, scarious margin; *upper palea* lance-linear, scabrous on the two keels. *Seed* oblong, reddish brown.

Hab. Fields, pastures, and dry hills: common. *Fl.* June. *Fr.* July.

Obs. This well known grass affords a good nutritious pasture for cattle,—but is not so much esteemed as the P. *pratensis*, or green meadow grass; and it is sometimes rather troublesome, in the rotation of crops, by its tenacity of life. Dr. *Torrey* notices a slender *variety*, with 2 to 3-flowered spikelets, growing in dry woodlands, which may, perhaps, be native: But I suspect the common Blue grass of our pastures is an introduced plant. It certainly has as much the appearance of being a foreigner as P. *pratensis*.

* * *Florets free, or not webbed at base.*

5. P. ANNUA, *L.* Culm oblique, compressed; panicle spreading, at length divaricate; spikelets ovate-oblong, about 5-flowered; florets a little remote. *Beck, Bot. p.* 409. SPECIM. *Gray, Gram.* 2. *no.* 118.

ANNUAL POA.

Gallicè—Paturin annuel. *Germanicè*—Jaehriges Rispengras.

Root annual. *Culm* cespitose, 3 to 8 inches long, oblique, (often nearly procumbent,) geniculate, glabrous. *Leaves* lance-linear, keeled, glabrous, minutely serrulate on the margin, short: *sheaths* loose, smooth; *ligule* oblong, dentate. *Panicle* sometimes rather secund; branches generally solitary, subdivided, at length spreading horizontally. *Spikelets* rather crowded on the divisions of the branches, 3 or 4 to 6-flowered. *Glumes* unequal, lance-ovate, acuminate. *Palcæ* minutely pubescent; lower one ovate, obtuse, 5-nerved; upper one a little shorter, lance-linear, white, with two green marginal keels.

Hab. Cultivated grounds; foot paths, &c. frequent. *Fl.* April—Sept. *Fr.* June—Oct.

Obs. This humble species is believed to have been introduced from Europe.

6. P. NERVATA, *Willd.* Panicle large, loose, diffuse; branches very slender, at length pendulous; spikelets ovate-oblong, about 5-flowered; florets obtuse, conspicuously 7-nerved; ligule oblong-ovate, lacerate.
Beck, Bot. p. 411. SPECIM. *Gray, Gram.* 1. *no.* 57.
P. striata. *Mx. Am.* 1. *p.* 69. Also? *Pers. Syn.* 1. *p.* 89.
Also, P. lineata. *Pers. Syn.* 1. *p.* 89.
Also? P. parviflora. *Pursh, Am.* 1. *p.* 80. *Ell? Sk.* 1. *p.* 157. *Nutt? Gen.* 1. *p.* 67. *Eat. Man. v.* 269.

Also, Briza canadensis. *Nutt. Gen.* 1. *p.* 69. Not of the *Suppl.* nor of *Mx. Pers. Torr.* &c.

NERVED POA.

Root perennial. *Culm* 3 to 4 feet high, smooth. *Leaves* lance-linear, 6 to 15 inches long, striate, smooth beneath, scabrous on the upper surface: *sheaths* striate, somewhat scabrous: *ligule* oblong-ovate, lacerate. *Panicle* very loose; branches by 2's or 3's, long and capillary, subdivided, angular, scabrous. *Spikelets* ovate-oblong, 3 or 4 to 6-flowered: *florets* distinct, caducous. *Glumes* persistent, very small, unequal, lance-ovate, mostly acute or acuminate, membranaceous, nerveless, with a green keel. *Paleæ* nearly equal, obtuse; the lower one lance-ovate, with 7 elevated nerves; the upper one subcoriaceous, lance-obovate, concave above, or on the back, bordered by the two keels, with the margins folded in, so as nearly to meet on the inner side. *Seed* ovate, acute, dark brown.

Hab. Swamps, and along muddy rivulets: frequent. *Fl.* June. *Fr.* July.

7. P. ELONGATA? *Torr.* Panicle elongated, racemose; branches subsolitary, appressed; spikelets ovate, obtuse, somewhat tumid, 3 or 4-flowered; florets rather acute, 5 or 7-nerved; ligule very short. *Beck, Bot. p.* 411.

ELONGATED POA.

Root perennial. *Culm* 3 to 4 feet high, smooth. *Leaves* lance-linear, about a foot long, striate, somewhat scabrous on both sides: *sheaths* striate, smooth; *ligule* very short, almost obsolete. *Panicle* 8 to 12 inches long, slender, contracted, racemose; branches shorter than in the preceding species, erect, appressed, solitary, or often with a second smaller one, scabrous. *Spikelets* usually 3 or 4-flowered; *florets* free. *Glumes* nearly equal, membranaceous, keeled. *Paleæ* unequal; lower one ovate, rather acute, distinctly 5 (or more frequently 7?) nerved; upper one a little shorter, subcoriaceous, rounded at apex, somewhat conduplicate. *Stamens* 2? *Seed* lance-ovate, acute, reddish brown.

Hab. Swamp, at the Bath: West Chester: rare. *Fl.* June. *Fr.* July.

Obs. Found by D. TOWNSEND, Esq. in 1829. I am not entirely confident of this species. It is certainly nearly allied to the preceding; but in the main it agrees so well with Dr. *Torrey's* description, and also with a specimen received from the late Mr. *Schweinitz*, that I am disposed to give it a place. The *ligule* and *panicle* accord well with P. *elongata;* and in a number of florets which I examined I constantly found but *two stamens*. The *lower palea*, however, though sometimes 5-nerved, is more commonly 7-nerved.

8. P. CAPILLARIS, *L.* Culm much branched at base; sheaths pilose at throat; panicle capillary, large, loose, expanding; spikelets ovate, acute, 3 to 5-flowered. *Beck, Bot. p.* 411. SPECIM. *Gray, Gram.* 2. *no.* 124.

Also 2 P. tenuis. *Ell. Sk.* 1. *p.* 156. *Nutt. Gen.* 1. *p.* 66. *Bart. Phil.* 1. *p.* 62. *Eat. Man. p.* 269.

CAPILLARY, OR HAIR-PANICLED POA.

Root annual. *Culm* oblique, or ascending, 6 to 12 inches long, somewhat compressed, glabrous, cespitose, and much branched at base. *Leaves* linear, attenuated at the end, finely striate, smooth, (pilose, *Muhl.*): *sheaths* nerved, smooth, rather loose, with long hairs at throat, and sometimes along the margin; *ligule*

short, ciliate. *Panicle* long, loose, much branched; branches diffuse, very slender, scabrous, nodose but not pilose at base. *Spikelets* mostly 3-flowered, sometimes 5-flowered, solitary, on long capillary peduncles. *Glumes* nearly equal, lanceolate, acute, scabrous on the keel. *Lower palea* lance-ovate, acute, 3-nerved, scabrous on the keel; *upper palea* shorter, obtuse, emarginate, arched, or curved towards the lower one, scabrous on both keels. *Seed* oval, gibbous at base, reddish brown.

Hab. Sandy soils; Boot Tavern: Londongrove: not common. *Fl.* Aug. *Fr.* Sept.

Obs. We have also, on the Mica-slate hills, the P. *tenuis*, of *Elliott*,—a plant as large as P. *hirsuta*,—with long radical leaves, sheaths pilose along the margin, a very large, spreading, capillary panicle, and spikelets 1 to 3-flowered; which, however, Dr. *Pickering* thinks is not specifically distinct. If not a distinct species, it certainly constitutes a very striking *Variety*.

9. P. HIRSUTA, *Mx.* Culm simple; panicle very large, much branched; branches expanding, at length divaricate, bearded in the axils; spikelets pedunculate, oblong, 5 to 8-flowered; upper palea ciliate on the two keels. *Beck, Bot. p.* 411. SPECIM. *Gray, Gram. 1. no.* 54.
Also, P. spectabilis. *Pursh, Am. 1. p.* 81.

HIRSUTE POA.

Root annual? *Culm* stout, 1 to 2 feet high, mostly simple and smooth. *Leaves* long, lanceolate, attenuate at the end, strongly nerved, smooth beneath, scabrous on the margins and upper surface, pilose near the base: *sheaths* striate, loose, longer than the joints, lower ones hairy, upper ones smooth; *ligule* densely bearded. *Panicle* 8 to 15 inches long, much branched, expanding; branches slender, scabrous, pilose in the axils, the main ones nodose at base, divaricate when old. *Spikelets* purple, lance-oblong, on long peduncles. *Glumes* nearly equal, ovate-lanceolate, acute, scabrous on the keel. *Lower palea* ovate, acute, 3-nerved, roughish pubescent; *upper palea* linear-lanceolate, conduplicate, conspicuously ciliate on the two keels. *Seed* minute, purple.

Hab. Sterile, sandy fields, road-sides, &c. frequent. *Fl.* August. *Fr.* Sept.

Obs. With us, the culm and upper sheaths of this plant are quite smooth: But I have a Southern specimen, in which the sheaths, leaves, culm, and even the branches of the panicle, are remarkably pilose. I have no doubt our plant is the P. *spectabilis*, of *Pursh*: but I incline to think the P. *refracta, Muhl.* and *Elliott*, (which Dr. *Torrey* makes a Synonym,) may be a distinct species. I have received specimens, from my friend Mr. CURTIS, of N. Carolina, which agree exactly with *Elliott's* figure and description of P. *refracta*;—the spikelets being linear-lanceolate, subsessile, and racemose on the capillary branches.

10. P. PILOSA, *L.* Culm cespitose, oblique, geniculate at base; sheaths pilose at throat; panicle capillary, pyramidal, the lower branches pilose in the axils; spikelets lance-linear, 5 to 12-flowered; glumes very unequal; upper palea persistent. *Muhl. Gram. p.* 141. SPECIM. *Gray, Gram. 2. no.* 123.
P. pectinacea. *Mx. Am. 1. p.* 69. *Pursh, Am. 1. p.* 81. *Nutt. Gen. 1. p.* 67. *Ell. Sk. 1. p.* 161. *Torr. Fl. 1. p.* 114. *Ejusd. Comp. p.* 59. *Beck, Bot. p.* 411. *Eat. Man. p.* 269. Also, *Pers. Syn. 1. p.* 91.
Also, P. tenella. *Pursh, Am. 1. p.* 80. *Ell? Sk. 1. p.* 160. *Nutt. Gen. 1. p.* 67. Not? of *Willd. Ait.* nor *Pers.*
Eragrostis pilosa. *Lindl. Ency. p.* 68.
PILOSE, OR HAIRY POA.

Root annual. *Culm* 6 to 12 inches long, often decumbent and geniculate at base, smooth. *Leaves* linear-lanceolate, 1 to 3 or 4 inches long, striate, smooth beneath, slightly scabrous on the margin and upper surface: *sheaths* striate, smooth, bearded with long white hairs at throat; *ligule* short, ciliate. *Panicle* loose; branches flexuose, slightly scabrous, the lower ones subverticillate, mostly pilose in the axils. *Spikelets* linear, or lance-linear, 5 to 12 or 13-flowered. *Glumes* unequal, nerveless, membranaceous; the lower one much smaller, acute. *Lower palea* ovate, obscurely 3-nerved, slightly scabrous on the keel, purple near the apex; *upper palea* a little shorter, somewhat conduplicate, scabrous on the two keels, persistent on the rachis. *Seed* oblong, brown.

Hab. Road-sides, Gardens, &c. frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This appears to be perfectly identical with specimens from Italy, sent me by Professor *Hooker*.

11. P. Eragrostis, *L.* Culm oblique, geniculate, somewhat cespitose; panicle expanding, pyramidal; branches subdivided, sparingly pilose in the axils; spikelets ovate-oblong, 12 to 20 or 30-flowered; glumes nearly equal. *Beck, Bot. p.* 412. Specim. *Gray, Gram. l. no.* 53.

Also ? P. megastachya. *Pers. Syn.* 1. *p.* 90. *Nutt. Gen.* 1. *p.* 67.

Briza Eragrostis. *Mx. Am.* 1. *p.* 72. *Muhl. Catal. p.* 12. *Ejusd. Gram. p.* 154. *Bart. Phil.* 1. *p.* 63. *Florul. Cestr. p.* 13. Also ? *Willd. Sp.* 1. *p.* 405. *Ait. Kew.* 1. *p.* 159. *Pursh, Am.* 1. *p.* 82. *Ell. Sk.* 1. *p.* 165. Icon, *Ell. l. c. tab.* 10. *f.* 1.

Megastachya Eragrostris. *Lindl. Ency. p.* 68.

Vulgò—Quake Grass. *Gallicè*—Paturin amourette.

Root annual. *Culm* somewhat decumbent, 1 to 2 feet long, geniculate, nodose, glabrous. *Leaves* lanceolate, attenuate at the end, striate, smooth beneath, scabrous on the margin and upper surface: *sheaths* striate, smooth, pilose at throat; *ligule* short, bearded. *Panicle* pyramidal; branches expanding, flexuose, scabrous, subdivided, the subdivisions often bearing 2, 3, or 4 spikelets. *Spikelets* of a bluish green, or leaden color, lance-ovate, or ovate-oblong, (sometimes very long, and nearly linear,) 12 to 20-flowered, (the long ones often more than 30-flowered). *Glumes* nearly equal, lance-ovate, scabrous on the keel. *Lower palea* ovate, rather acute, 3-nerved, roughish under a lens; *upper palea* shorter, oblanceolate, concave on the back, ciliate on the two keels. *Seed* roundish-ovoid, brown.

Hab. Gardens, road-sides, &c. frequent. *Fl.* Aug. *Fr.* September.

Obs. The plant emits a peculiar odor, when fresh, or recently gathered. I am not entirely confident that all the Synonyms I have quoted belong to this species, nor have I the means of determining; but have been led to suspect, from the descriptions, and the variety in the form and size of the spikelets, that such may be the fact. It is a handsome grass,—a native of the south of Europe, and now extensively naturalized; but it is of little or no value to the Agriculturist. There are 14 or 15 additional species enumerated in the U. States.

† † *Spikelets aggregated.*

50. DACTYLIS. *L. Nutt. Gen.* 103.

[Greek, *Dactylos*, a Finger: in reference to the form of the spikes.]

Spikelets 3 to 5-flowered, compressed, aggregated. *Glumes* unequal, shorter than the florets, acuminate. *Paleæ* nearly equal, lanceolate, acuminate; the lower one emarginate, keeled, cuspidate; the upper one somewhat conduplicate, bifid at apex. *Scales* dentate.

1. D. GLOMERATA, L. *Panicle distantly branched, rather secund; spikelets in dense unilateral clusters, at the ends of the branches.* Beck, Bot. p. 407. Icon, Ell. Sk. tab. 9. f. 3.

Clustered Dactylis. Vulgò—*Orchard grass. Cock's-foot grass.* Gallicè—*Dactyle pelotonné.* Germanicè—*Gemeines Knauelgras.*

Whole plant scabrous. Root *perennial.* Culm 2 *to* 4 *feet high.* Leaves *linear-lanceolate, keeled, glaucous:* sheaths *striate*; ligule *elongated, lacerate.* Panicle *glaucous, contracted, rather secund*; branches 3 *to* 5, *solitary, erect, distant, subdivided towards the extremity.* Spikelets *about* 4-*flowered, compressed, crowded in dense, unilateral, ovate or lance-oblong clusters, at the ends of the branches.* Glumes *unequal; the lower one narrower, membranaceous; the upper one* 3-*nerved, scabrous on the keel.* Lower palea *scabrous, ovate-lanceolate,* 5-*nerved, emarginate, ciliate on the keel, which is extended into a cusp, or short scabrous awn*; upper palea *lanceolate, acuminate, bifid at apex, ciliate on the two green keels, the margins replicate, or folded in so as to meet, embracing the stamens.* Seed *lance-oblong, acute at each end, subtriquetrous, flat or a little concave on the upper side, roundish on the lower.*

Hab. *Fields, orchards,* &c. *frequent.* Fl. *May.* Fr. *June.*

Obs. *This grass has been introduced, and is naturalized amongst us to a considerable extent. Our farmers are not agreed upon its merits. Some condemn it as unworthy of culture, either for pasture or hay; whilst others set a high value on it, for both. The fact seems to be, that it is inferior to Timothy* (Phleum pratense) *for hay; yet it has the advantage of the latter, in being mature at the same time with clover,—with which both are usually cultivated. It is also less exhausting to the soil. But its great value is as a* pasture, *when sown sufficiently thick;—which, however, it rarely is,—and hence is apt to form bunches, or become* tussocky. *It is of quick growth, and is speedily reproduced after being cut, or eaten down—so much so, that we may almost literally apply to it the words of* Virgil—

"Et quantum longis carpent armenta diebus
Exiguâ tantum gelidus ros nocte reponet." Georg. lib. 2. 201.

This grass also possesses the additional advantage of thriving well in the shade; and answers a very good purpose in orchards, &c. *The* seed *is usually sown in autumn, immediately after Wheat, or Rye. It is the only species of the genus in the U. States.*

Div. V. Chlorideæ—*Chloris Tribe.*

Inflorescence *Spiked, mostly unilateral.* Spikelets *solitary, few-flowered; terminal floret often abortive.* Glumes *keeled, not opposite.* Lower palea *frequently awned*; upper palea *with two keels.*

† *Paleæ awned.*

51. ATHEROPOGON. *Muhl. Nutt. Gen.* 110.

[*Greek, Ather,* a Bristle, and *Pogon,* Beard; the beards being bristle-like.]

Spikelets in unilateral spikes, 2-flowered; terminal floret abortive. *Glumes* 2, unequal, membranaceous; lower one shorter, setiform; upper one lanceolate, as long as the florets. *Perfect floret* subcoriaceous; *lower palea* tricuspidate; *upper palea* bifid-dentate. *Abortive floret* pedicellate, 3-awned, neuter.

1. A. APLUDOIDES, *Muhl.* Spikes in a terminal raceme, alternate, distant, pendulous on short flat peduncles, at length secund; lateral awns of the abortive floret half the length of the terminal one. *Beck, Bot. p.* 414. Icon, *Florul. Cestr. p.* 17.
Chloris curtipendula. *Mx. Am.* 1. *p.* 59. *Pers. Syn.* 1. *p.* 88. *Lindl. Ency. p.* 860. Also, *Willd. Sp.* 4. *p.* 927. *Pursh, Am.* 1. *p.* 88.
Also? Cynosurus secundus. *Pursh, Am.* 2. *Suppl. p.* 728.
APLUDA-LIKE ATHEROPOGON.

Root perennial. *Culm* 2 to 3 feet high, geniculate at base, smooth. *Leaves* lanceolate, attenuate at the end, and inclining to become involute, striate, cartilaginous and minutely serrulate on the margin, smoothish beneath, scabrous on the upper surface, pilose above, and near the base: *sheaths* striate, lower ones hairy, upper ones smooth, all more or less pilose at throat; *ligule* short, truncate, minutely fimbriate. *Spikes* 20 to 40, on short flat peduncles, arranged alternately in a raceme, on opposite sides of the *common rachis*, at length secund, and reflexed, each containing 6 or 8 spikelets. *Partial rachis* flat, lance-linear, ciliate-serrate on the margin, the apex mostly bicuspidate, and as long as the florets. *Spikelets* 2-flowered, in two rows on the under side of the partial rachis. *Glumes* unequal; the lower one a little distant, awn-like, margined towards the base, and inclining to adhere to the rachis; the upper one lanceolate, acuminate, scabrous. *Perfect floret* sessile, lanceolate; *lower palea* scabrous, 3-nerved, terminating in 3 cusps, or short awns: *upper palea* a little longer, enclosing the stamens, the apex conduplicate, acuminate, and bifid-toothed. *Anthers* bright red, or cinnabar color. *Seed* oblong. *Abortive floret* pedicellate, empty, membranaceous; *lower palea* ovate-lanceolate, bifid at apex, the scabrous keel extended into a terminal awn between the lanceolate segments,—the margins folded in, with an awn at each side, near the base, as long as the palea; *upper palea* very minute, bifid, or lacerate,—often wanting, or imperceptible.

Hab. Dry, rocky banks; Serpentine ridge, abundant. *Fl.* Aug. *Fr.* Sept.

Obs. The lateral awns of the abortive floret, unless cautiously examined—especially in dried specimens—appear to be distinct from the palea, and to occupy the place of an upper palea. This handsome grass—so remarkable for its racemose nodding spikes, and showy vermilion-colored anthers, is quite local and circumscribed in its *habitat*. It is generally confined to the Serpentine rock: but is sometimes met with on limestone banks—as, for example, near Brooke's Mill, in the Great Valley. It is not a grass of much value,—though cattle will feed on it, when in a young state. Mr. *Nuttall* has found one other species in the U. S. on the plains of the Missouri.

†† *Paleæ awnless.*

52. ELEUSINE. *Gærtn. Nutt. Gen.* 107.
[From *Eleusis*; where *Ceres*, the goddess of harvests, was worshipped.]

Spikes digitate, unilateral. *Spikelets* compressed, imbricate, 5 to 7-flowered. *Florets* all perfect. *Glumes* 2, unequal; lower one smaller, membranaceous, rather obtuse. *Paleæ* unequal; upper one much shorter, concave on the back. *Scales* truncate. *Seed* triangular-ovoid, arillate, rugose.

1. E. INDICA, *Lam.* Culm oblique, compressed; spikes 2 to 4, linear, straight; spikelets lance-ovate, about 5-flowered. *Beck, Bot. p.* 414. Icon, *Ell. Sk.* 1. *tab.* 11. *f.* 2.
Cynosurus indicus. *Willd. Sp.* 1. *p.* 417. *Ait. Kew.* 1. *p.* 162.

Indian Eleusine. *Vulgò*—Crab grass. Dogs-tail grass. Wire grass.

Root annual. *Culm* oblique or procumbent, 9 to 18 inches long, compressed, smooth branching at base. *Leaves* somewhat distichous, linear, sparingly pilose, scabrous near the end: *sheaths* loose, striate, glabrous, pilose at throat; *ligule* very short, minutely dentate. *Spikes* 2 to 4, sometimes 6, rarely 1; *rachis* compressed, bearded at base. *Spikelets* closely imbricate, smooth. Upper *glume* 5-nerved, nerves approximate. *Paleæ* membranaceous; lower one ovate-lanceolate, with a green keel; upper one a third shorter, somewhat conduplicate, with 2 keels. *Seed* arillate, or coated with a thin membrane, triangular-ovoid, transversely corrugated, dark brown.

Hab. Farm yards, lanes, and along foot paths: common. *Fl* Aug. *Fr.* Sept.

Obs. This grass makes a fine carpeting in lanes and wood yards, in the latter part of summer. Cattle and hogs are very fond of it,—and Mr. *Elliott* commends it, for hay; but it rarely grows in mowing grounds, to any extent, with us. It always appeared like an introduced plant, to my view,—though no American Botanist speaks of it as such. One or two other species have been found in the Southern States.

Div. VI. Hordeaceæ—*Hordeum, or Barley Tribe.*

Inflorescence *Spiked.* Spikelets *solitary, in pairs, or several together; one, few, or many-flowered.* Glumes *mostly two, equal and opposite.* Lower palea *often awned;* upper one *with two keels.*

† *Glumes* 2: * *subulate.*

53. SECALE. *L. Nutt. Gen,* 120.

[Supposed to be from the Latin, *secare*, to cut; or from the Celtic, *Sega*, a sickle.]

Spikelets solitary on the teeth of the rachis, 2 to 3-flowered; the two lower florets fertile, sessile, opposite; the upper abortive. *Glumes* subulate, opposite, shorter than the florets. *Lower palea* entire, acuminate, bristly-ciliate on the keel, terminating in a very long awn. *Upper palea* lanceolate.

1. S. cereale, L. *Paleæ smooth; lower one bristly-ciliate on the keel and exterior margin; awns setaceously scabrous.* Beck, Bot. p. 415.

Harvest Secale. Vulgò—*Rye.*

Gallicè—*Le Seigle.* Germanicè—*Der Roggen.* Hispanicè—*Centeno.*

Root *biennial?* Culm 4 *to* 6 *feet high, glabrous, hairy near the spike.* Leaves *linear-lanceolate, smooth beneath, roughish on the margin and upper surface, glaucous*: sheaths *membranous, nerved, smooth*; ligule *short, dentate.* Spike 4 *to* 6 *inches long, compressed, linear.* Spikelets *mostly* 2*-flowered, with an* awn-like rudiment *between the florets.* Glumes *a little distant from the florets, opposite, nearly equal, linear-subulate, scabrous, bristly-pilose at base.* Lower palea *ventricose, acuminate, compressed at apex,* 5*-nerved, terminating in a long scabrous awn*; keel *and* exterior margin *bristly-ciliate*; inner margin *not ciliate, and the nerves on that side less conspicuous.* Upper palea *lanceolate, acuminate, often bifid at apex, and sparingly ciliate on the two keels.* Seed *oblong, subcylindric.*

Hab. *Cultivated fields: frequent.* Fl. *June.* Fr. *July.*

Obs. *This is the only species of the genus which has been introduced. It is cultivated to a considerable extent, here,—particularly on the Mica-slate hills, where it yields grain of a better quality; but it is generally considered far inferior to Wheat, and therefore much less of it is sown, where the land is of a quality to produce good wheat. The* seed *is subject—particularly in wet seasons—to become diseased, and enlarged; producing what is called* Ergot, *or* Spurred Rye. *This diseased grain is injurious to health, when made into bread; but has been found to possess important* medical properties, *when judiciously exhibited. The seed is sown in all the month of October.*

54. ELYMUS. *L. Nutt. Gen.* 118.

[An ancient Greek name, of obscure derivation.]

Spikelets 2 or more at each joint of the rachis, 2 or 3 to 6-flowered. *Glumes* 2, collateral, nearly equal, subulate, (rarely 1, or wanting). *Paleæ* lanceolate, subcoriaceous; lower one entire, awned, or mucronate. *Scales* lanceolate, ciliate.

1. E. VIRGINICUS, *L.* Spike erect, coarctate; spikelets in pairs, about 3-flowered; glumes linear-lanceolate, as long as the spikelets, not hairy; florets smoothish. *Beck, Bot. p.* 415. Not of *Florul. Cestr.* Icon. *Ell. Sk.* 1. *tab.* 12. *f.* 2. Specim. *Gray, Gram.* 1. *no.* 60.

Virginian Elymus. *Vulgò*—Lyme Grass. Wild Rye.

Root perennial. *Culm* 3 to 4 feet high, smooth. *Leaves* lanceolate, very acute, nerved, broadish, deep green, scabrous on both sides and on the margin: *sheaths* nerved, smooth, or sometimes pubescent; *ligule* very short, crenate. *Spike* stiffly erect, 3 to 5 inches long; *rachis* smooth (sometimes minutely hirsute). *Spikelets* 3 to 5-flowered; usually 3 perfect florets, and one or two abortive ones at the summit. *Glumes* collateral, slightly connate and somewhat thickened and cartilaginous at base, 5-nerved, attenuated into a scabrous awn at apex. *Lower palea* oblong-lanceolate, naked, very obscurely nerved, terminating in a scabrous awn; *upper palea* lance-oblong, slightly emarginate, concave on the back, setaceously scabrous on the two keels near the apex. *Ovary* densely and coarsely bearded at summit.

Hab. Borders of Creeks: Brandywine, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. The plant erroneously given by this name, in *Florul. Cestr.* proves to be E. *canadensis*. The spikes of this and the two following species, look something like heads of *Barley*, at a little distance.

2. E. CANADENSIS, *L.* Spike rather patulous and nodding at the extremity; spikelets 2 to 5-flowered; glumes and florets hairy. *Beck, Bot. p.* 415. Specim. *Gray, Gram.* 1. *no.* 61.

Also, E. philadelphicus. *Willd. Sp.* 1. *p.* 468. *Muhl. Catal. p.* 14. *Pursh, Am.* 1. *p.* 89.

Also, E. glaucifolius. *Pursh, Am.* 1. *p.* 89. *Muhl. Catal. p.* 14. *Ejusd. Gram. p.* 177. *Nutt. Gen.* 1. *p.* 87.

Canadian Elymus.

Root perennial. *Culm* 3 to 4 feet high, rather stout, glabrous. *Leaves* lanceolate, acute, somewhat scabrous, green (sometimes glaucous): *sheaths* nerved, smooth; *ligule* short. *Spike* 4 to 6 or 8 inches long, a little spreading, and often nodding at the extremity; *rachis* hirsute. Lower *spikelets* often 2-flowered. *Glumes* linear-lanceolate, awned, hirsute, 5 or 7-nerved, 3 or 4 of them prominent. *Lower palea* hairy, awned; *upper palea* rather obtuse, often emarginate, ciliate on the two keels. *Seed* linear-oblong, bearded at summit.

Hab. Margins of streams: Brandywine: Schuylkill: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. This species often has much resemblance to the preceding; except that the florets and rachis are remarkably hirsute. Tho *var. glaucifolius, Torr.* is generally a taller plant, with longer and more patulous spikes, the awns long and somewhat flexuose, and the whole plant glaucous. It occurs along the Schuylkill, near Black Rock.

3. E. VILLOSUS, *Muhl.* Spike somewhat nodding, patulous; rachis and florets hispid-pilose; spikelets 1 to 3-flowered; glumes linear, pilose-ciliate, 2 or 3-nerved. *Beck, Bot. p.* 415. SPECIM. *Gray, Gram.* 1. *no.* 62.
Also, E. ciliatus. *Muhl. Catal. p.* 14. *Ejusd. Gram. p.* 179.
VILLOUS ELYMUS.

Root perennial. *Culm* 2 to 3 feet high, rather slender, striate, smooth. *Leaves* lanceolate, scabrous, especially on the margins, pubescent on the upper surface: *sheaths* nerved, hairy, upper ones often smooth; *ligule* very short, or obsolete. *Spike* 2 to 3 inches long, at first erect, at length spreading and somewhat nodding; *rachis* villous. *Spikelets* 2 or 3-flowered,—sometimes 1-flowered, with a pedicellate rudiment of a second. *Glumes* nearly linear, 2 or 3-nerved, pilose-ciliate. *Lower palea* very hairy, terminating in a long, straight, scabrous and somewhat ciliate awn; *upper palea* lance-oblong, obtuse, concave on the back, scabrous on the two keels. *Seed* oblong, light brown, pubescent at summit, adhering to the paleæ.

Hab. Banks of streams; Brandywine: frequent. *Fl.* July. *Fr.* Sept.

4. E. HYSTRIX, *L.* Spike erect; spikelets distant, diverging, about 3-flowered; glumes mostly wanting; florets smooth. *Beck, Bot. p.* 415. SPECIM. *Gray, Gram.* 2. *no.* 130.
PORCUPINE ELYMUS.

Root perennial. *Culm* 2 to 4 feet high, smooth. *Leaves* lanceolate, keeled, nerved, scabrous on the margin and upper surface, often glaucous: *sheaths* striate, smooth; *ligule* short, retuse. *Spike* 4 to 6 inches long; *rachis* compressed, smoothish, serrulate on the margins. *Spikelets* distant, at length diverging almost horizontally, often 3 at each joint of the rachis. *Glumes* generally wanting, or consisting of a callous rudiment: but not unfrequently the upper and lower spikelets have one or two linear-subulate glumes, as long as the florets. *Florets* smoothish, with a short rigid pubescence at base, articulated to clavate obliquely truncate pedicels. *Lower palea* obscurely 5-nerved, terminating in a very long scabrous awn; *upper palea* lance-linear, obtuse, ciliate-serrulate on the two keels. *Seed* linear-oblong, upper side concave, with a dark purple line in the centre, bearded at summit, adhering to the paleæ.

Hab. Rich, moist, rocky woodlands: frequent. *Fl.* July. *Fr.* Aug.

Obs. The expanded bristly spike of this remarkable species somewhat resembles an Apothecary's bottle-washer. One or two additional species have been found in the United States.

55. HORDEUM. *L. Nutt. Gen.* 119.
[An ancient Latin name, of obscure derivation.]

Spikelets 3 at each joint of the rachis, the lateral ones often abortive, each 1-flowered, with a subulate rudiment of a second floret. *Glumes* 2, nearly equal, collateral, lance-linear, flat, awned. *Lower Palea* lanceolate, concave, terminating in a long awn; *upper one* lanceolate, acuminate, obtuse. *Seed* adhering to the paleæ.

1. H. VULGARE, L. *Spikelets all fertile, awned; the seeds arranged in four rows.* Willd. Sp. 1. p. 472.

COMMON HORDEUM. Vulgò—*Barley. Four-rowed Barley.*

Gallicè—*Orge commune.* German.—*Die Gerste.*—Hispan.—*Cebada.*

Root *annual.* Culm 2 *to* 3 *feet high, smooth.* Leaves *lanceolate, keeled, striate, smoothish:* sheaths *nerved, smooth, auriculate at throat;* ligule *very short.* Spike *about* 3 *inches long, thick, somewhat* 4-*sided:* rachis *compressed, smooth, pubescent on the margin.* Spikelets 1-*flowered, with a pubescent awn-like rudiment at the base of the upper palea.* Glumes *collateral, in front, shorter than the florets, flat, subulate-linear, pubescent, terminating in a slender awn.* Lower palea 5-*nerved, smoothish, scabrous near the apex, terminating in a very long* awn, *which is keeled, somewhat* 3-*nerved, and serrulate on the margin.* Upper palea *acuminate, obtuse, sometimes emarginate.* Ovary *pilose at summit.* Seed *lance-oblong, somewhat angular, sulcate on the upper side, adhering closely to the paleæ.*

Hab. *Cultivated fallow grounds: frequent.* Fl. *May.* Fr. *June.*

Obs. *This and the following species are cultivated extensively,—and almost exclusively for the* Breweries. *The grain is rarely given to cattle; and Barley bread is unknown here. The plant requires a good soil,—and, hence, serves as a kind of index to the quality of our farms: the fallow crop on good land being generally* Barley,—*while the occupants of a poor soil have to be content with a crop of* Oats. *The* seed *is sown about the last of March.*

2. H. DISTICHUM, L. *Lateral spikelets abortive, awnless; the seeds arranged in two rows.* Willd. Sp. 1. p. 473.

DISTICHOUS HORDEUM. Vulgò—*Two-rowed Barley.*

Root *annual.* Culm 2 *to* 3 *feet high, smooth.* Leaves *lanceolate, nerved, scabrous on the upper surface:* sheaths *nerved, smooth, with* 2 *lanceolate auricular appendages at throat;* ligule *short, truncate.* Spike 3 *to* 4 *inches long, compressed, linear:* rachis *compressed, smooth, hirsute on the margin.* Spikelets 1-*flowered; the central one perfect, the lateral ones staminate, or neuter.* Glumes *lance-linear, pilose, terminating in a short slender awn.* Perfect floret *sessile;* lower palea *subcoriaceous, smooth, keeled or angular, partially* 5-*nerved, terminating in a very long, keeled, serrulate awn, and embracing the upper palea.* Upper palea *with a pilose awn-like rudiment at base.* Abortive florets *pedicellate, mostly staminate, (sometimes neuter?)* lower palea *awnless;* upper one *with a naked awn at base.*

Hab. *Cultivated fallow grounds: frequent.* Fl. *June.* Fr. *July.*

Obs. *This species is something later than the preceding, in coming to maturity; and on that account is preferred by many farmers—as it interferes less with their Hay crops. It also stands better, and yields a heavier grain,—though not a greater quantity. The* seed *is sown at the same time as the foregoing. Two other species have been found in the U. States.*

* * *Glumes broad, boat-shaped.*

56. TRITICUM. *L. Nutt. Gen.* 121.

[Latin, *Tritum*, rubbed, or ground; the seed being so prepared for food.]

Spikelets distichously imbricated, sessile on the teeth of the rachis, about 5-flowered, the 2 terminal florets mostly abortive. *Glumes* 2, equal, opposite, ovate, concave, mucronate. *Lower palea* boat-shaped,

awned, or mucronate; *upper palea* somewhat conduplicate. *Scales* 2, collateral, ciliate. *Ovary* hirsute at summit.

1. T. SATIVUM, *var.* hybernum, L. *Spike somewhat 4-sided, imbricated; spikelets rather crowded, broad-ovate, obtuse, 4 or 5-flowered; glumes ventricose, truncate, mucronate; lower palea awned, or mucronate.* Pers. Syn. 1. p. 109.

T. *hybernum.* Willd. Sp. 1. p. 477. Eat. Man. p. 373.

COMMON TRITICUM. Vulgò—*Wheat. Winter Wheat.*

Gallicè—*Bled d'hiver.* German.—*Der Weitzen.* Hispanicè—*Trigo.*

Root *biennial?* Culm 3 *to* 5 *feet high, terete, somewhat inflated, smooth; nodes striate, pubescent.* Leaves *lanceolate, nerved, smooth, or slightly scabrous on the upper surface:* sheaths *nerved, smooth*; ligule *truncate, dentate.* Spike 3 *to* 6 *inches long, dense, 4-sided:* rachis *compressed, broad, smooth, striate at each border, and hirsute on the margin.* Spikelets *sessile, broad, obtuse, compressed at apex.* Glumes *ventricose, obtuse, mucronate, (sometimes acuminate,) compressed at apex* Florets *usually* 3 *fertile, and* 2 *abortive; the penultimate one pistillate, the terminal one neuter and pedicellate.* Paleæ *nearly equal; the lower one ventricose, awned, or mucronate; the upper one conduplicate, ciliate on the two keels.* Scales *ovate, ciliate.* Seed *ovoid-oblong, sulcate on the upper side, pubescent at summit.*

Hab. *Fields: common.* Fl. *June.* Fr. *July.*

Obs. *This, the most valuable, perhaps, of all the grass tribe, is very generally cultivated here. We have several* sub-varieties, *such as* awned, *and* awnless,—white wheat, red-chaff, &c. *which are severally preferred as they seem best to succeed in different soils,—or are best calculated to resist the ravages of the insect called* Hessian Fly. *The* Var. æstivum, *or* Spring wheat, *is now very rarely sown. Several years since, through the politeness of* Commodore Porter, *I received some seed from* Valparaiso, *under the name of* Chili Wheat; *and subsequently a parcel from the* Grecian Archipelago, *from my friend* Dr. FREEDLEY, *of Philadelphia. I cultivated both, and found them to be the same,* viz. *the* Var. durum, Pers. *with* nearly solid, or pithy culms, short, thick, glaucous spikes, *and* broadly mucronate glumes. *It did not appear to me to be in any respect equal to our common variety,—at least for this climate. Our winter wheat is usually sown about the first of October.*

2. T. REPENS, *L.* Spike distichous, compressed; spikelets distant, alternate, lance-oblong, acute, 5 or 6-flowered; glumes lanceolate, 5-nerved, acuminate. *Beck, Bot. p.* 416.

Agropyron repens. *Torr. Fl.* 1. *p.* 135. *Ejusd. Comp. p.* 65. *Eat. Man. p.* 7.

CREEPING TRITICUM. *Vulgò*—Couch grass. Quitch grass.

Root perennial, creeping. *Culm* about 2 feet high, smooth. *Leaves* linear-lanceolate, nerved, scabrous and somewhat pilose on the upper surface: *sheaths* nerved, smooth; *ligule* short, truncate. *Spike* 3 to 5 inches long: *rachis* flexuose, compressed, scabrous on the margin. *Glumes* keeled, strongly nerved, roughish, outer margin broader. *Florets* alternate, a little distant. *Lower palea* lance-oblong, 5-nerved, mucronate, smooth; *upper palea* lance-linear, obtuse, ciliate-serrulate on the two keels.

Hab. Grass lots: West-town School: rare. *Fl.* July. *Fr.* August.

Obs. This is but remotely allied to the genuine Wheat; and is an extremely troublesome grass in cultivated grounds, where it is prevalent. It is believed to

be an introduced plant; and has only been observed, as yet, at West Town School.—where it was collected by Mr. Pennock Passmore, in 1831. One or two other species, which are generally referred to this genus, have been partially introduced into the U. States. There are none native.

† † *Glume mostly one.*

57. LOLIUM. *L. Nutt. Gen.* 122.

[A classical Latin name; applied to this genus.]

Spikelets many-flowered, alternate, distant, sessile, at right angles with, or the edge to the rachis. *Glume* a single bract,—except at the terminal spikelet, where there are 2. *Paleæ* herbaceous, nearly equal; lower one awnless, or sometimes with a short bristle at the tip.

1. L. perenne, *L.* Spikelets longer than the glumes, linear-oblong, compressed, about 7-flowered, florets awnless. *Beck, Bot. p.* 416.

Perennial Lolium. *Vulgè*—Ray-grass. Darnel.

Gallicè—Yvraie vivace. *Germanicè*—Der Lolch. *Hispanicè*—Joyo.

Root perennial, creeping. *Culm* 1 to 2 feet high, smooth. *Leaves* linear-lanceolate shining green, smooth, somewhat scabrous near the end: *sheaths* striate, glabrous, *ligule* truncate. *Spike* about 6 inches long: *rachis* flexuose, grooved, slightly sheathing the base of the spikelets. *Spikelets* 12 to 18 or 20, alternate, on opposite sides of, and with their edges to the rachis, distant, sessile, compressed, longer than the glumes, 7 to 9-flowered. *Glume* 1 to each spikelet, (except the terminal one,) lance-linear, acute, nerved, resembling a short rigid leaf. *Lower palea* lance-oblong, rather obtuse, obscurely 5-nerved: *upper one* a little longer, ciliate-serrulate on the two prominent keels.

Hab. Meadow banks, and grass lots: not very common. *Fl.* June. *Fr.* July.

Obs. This foreign grass is found in several neighborhoods; but is not extensively diffused, and I believe has never been cultivated here,—though somewhat prized in Europe. It affords a tolerably good pasture, and makes a handsome sward for yards and lawns; but it is doubtless inferior, in value, both to Timothy, and Orchard grass. One other species has been partially naturalized, in some parts of the U. States.

Div. VII. Saccharineæ—*Sugar-Cane Tribe.*

Inflorescence *Panicled, or spiked.* Spikelets *generally in pairs, polygamous; one mostly sessile and perfect, the other pedicellate and imperfect.* Glumes *of stouter texture than the paleæ.* Paleæ *delicate and membranaceous; one of them commonly awned.*

58. ANDROPOGON. *L. Nutt. Gen.* 88.

[Greek; literally *Man's Beard;* in allusion to the hairy florets.]

Spikelets in pairs; the lower one abortive, on a plumosely bearded pedicel, with the glumes and paleæ often incomplete (or wanting); the upper one perfect, mostly 1-flowered. *Glumes* of the *perfect spikelet* subcoriaceous, awnless. *Paleæ* shorter than the glumes, thin, and membranaceous; one generally awned.

* *Inflorescence Panicled.*

1. A. NUTANS, *L.* Panicle terminal, oblong, or loose and spreading, at length nodding; abortive spikelet incomplete; glumes of the perfect spikelet rufescent, shining, the lower one hairy; awn contorted. *Beck, Bot. p.* 418. SPECIM. *Gray, Gram.* 1. *no.* 67.
A. avenaceum. *Mx. Am.* 1. *p.* 58. *Pers. Syn.* 1. *p.* 104. *Bart. Phil.* 1. *p.* 54. *Florul. Cestr. p.* 15. Also, *Willd. Sp.* 4. *p.* 907. *Pursh, Am.* 1. *p.* 74. *Nutt. Gen.* 1. *p.* 61.
Also, A. ciliatus. *Ell. Sk.* 1. *p.* 144. *Eat. Man. p.* 18.

NODDING ANDROPOGON. *Vulgò*—Wood grass. Indian grass.

Root perennial. *Culm* 3 to 5 feet high, simple, terete, glabrous: *nodes* bearded with white appressed hairs (glabrous, *Muhl.*). *Leaves* glaucous, lanceolate, contracted at base, attenuated at apex, scabrous, margins serrulate: *sheaths* nerved, smooth; *ligule* elongated, truncate, bordered by a lanceolate extension of the margins of the sheath. *Panicle* oblong, 6 to 10 inches in length, often loose and spreading, finally nodding: the ultimate branches, or pedicels of the upper spikelets, plumosely hairy. *Abortive spikelet* pedicellate, often a mere awn-like plumose rudiment, shorter than the perfect one. *Glumes* of the *perfect spikelet* lanceolate, indurated, of a light russet brown color; the lower or outer one hairy, embracing the upper one, which is smooth and rather longer. *Paleæ* thin, membranaceous; lower one lance-linear, ciliate at apex and on the inflexed margins; upper? one (lower one, *Torr.*) shorter, bifid, awned below the division, contracted at the base so as to appear pedicellate; *awn* contorted, bent obliquely.

Hab. Sterile soils: neglected old fields: common. *Fl.* Aug. *Fr.* Sept.

Obs. I do not find it easy to determine, satisfactorily, whether it be the upper, or lower palea, that is awned, in this genus; but, to my view, it appears to be the *upper* one. Certainly, I think, it is the one next to the upper, inner, or embraced glume. Sometimes *both* paleæ are awned, in the terminal spikelets;—or perhaps, in these cases, there may be an effort at a *second floret*.

* * *Inflorescence Spiked: Spikes simple, conjugate, or fasciculate.*

2. A. MACROURUS, *Mx.* Sheaths somewhat scabrous and pilose; spikes conjugate; peduncles sheathed, fasciculate, in dense fastigiate panicles, terminal and lateral; abortive spikelet incomplete; perfect floret monandrous; awn straight. *Beck, Bot. p.* 418. SPECIM. *Gray, Gram.* 1. *no.* 66.

LARGE-TAILED ANDROPOGON. *Vulgò*—Cluster-flowered Indian grass.

Root perennial. *Culm* 2 to 3 feet high, smooth, sulcate on one side, much branched towards the top: *nodes* smooth. *Leaves* nerved, scabrous; lower ones linear, long; upper ones short, erect, linear-lanceolate, or somewhat subulate: *sheaths* rather open, roughish, upper ones often hairy: *ligule* short, truncate, minutely fringed. *Spikes* mostly in pairs, scarcely an inch long, partly concealed in the compressed, boat-shaped sheaths, aggregated in dense, fastigiate, terminal and lateral clusters; the common peduncles pilose at the base of the sheaths: *rachis* filiform, clothed with long white silky hairs. *Abortive spikelet* an awn-like plumose pedicel, longer than the perfect one. *Perfect spikelet* small, lance-linear, triquetrous, acuminate, angles serrulate: *glumes* equal; the lower or outer one with two green keels, the upper with one. *Paleæ* very thin and delicate, linear; the upper? one with a slender straight awn. *Stamen* 1.

Hab. Low, swampy grounds, in the Mica-slate: frequent. *Fl.* Sept. *Fr.* Octo

3. A. VIRGINICUS, *L?* Culm somewhat compressed; sheaths smooth; spikes 2 to 3, in slender, distant, appressed fascicles, lateral and terminal; abortive spikelet incomplete; perfect floret monandrous; awn straight. *Beck, Bot. p.* 418. SPECIM. *Gray, Gram.* 1. *no.* 65. A. dissitiflorum. *Mx. Am.* 1. *p.* 57. *Ell. Sk.* 1. *p.* 149. *Bart. Phil.* 1. *p.* 56. Also, *Pers. Syn.* 1. *p.* 104. *Willd. Sp.* 4. *p.* 914. *Pursh. Am.* 1. *p.* 75. *Nutt. Gen.* 1. *p.* 61.

VIRGINIAN ANDROPOGON

Root perennial. *Culm* about 3 feet high, smooth, compressed below, sulcate on one side, semi-terete above, with remote short branches partly concealed by the sheaths: *nodes* smooth. *Leaves* linear, scabrous on the margin; lower ones long, pilose on the margin and upper surface: *sheaths* smooth, pilose on the margin; *ligule* short, ciliate. *Spikes* in pairs, or 3's, about an inch long, in scattered lateral fascicles of 2 or 3 short slender branches, partly concealed in the compressed, acuminate sheaths. Common peduncle sometimes, but not generally, pilose at the base of the compressed, bract-like sheaths: *rachis* filiform, pilose with long white silky hairs. *Abortive spikelet* an awn-like plumose pedicel, longer than the perfect one. *Perfect spikelet* small, linear-lanceolate, triquetrous, acuminate, scabrous on the angles: *Glumes* equal; the lower or outer one with two green keels, the upper with one. *Paleæ* thin and delicate; upper? one shorter, bifid at apex, with a slender straight awn between the minute segments. *Stamen* 1.

Hab. Sterile hills, and exsiccated swamps; frequent. *Fl.* Sept. *Fr.* Octo.

Obs. This differs, in habit, from the preceding,—but is very nearly allied, in its botanical characters. It was first collected here in 1829, by D. TOWNSEND, Esq.

4. A. SCOPARIUS, *Mx.* Culm paniculately branched above; branches somewhat fasciculate, erect, slender; spikes simple, terminal and lateral, on long peduncles,; abortive spikelet mostly complete, neuter, awned. *Beck, Bot. p.* 417. SPECIM. *Gray, Gram.* 1. *no.* 64. A. purpurascens. *Muhl. Catal. p.* 94. *Ejusd. Gram. p.* 282. *Willd. Sp.* 4. *p.* 913. *Bart. Phil.* 1. *p.* 55. *Bigel. Bost. p.* 43.

BROOM ANDROPOGON. *Vulgò*—Purple Wood grass.

Root perennial *Culm* 3 to 4 feet high, rather slender, branched, smooth, somewhat compressed, sulcate on one side, tumid or gibbous at the nodes; *nodes* smooth: *branches* long, slender, in lateral fascicles, or sometimes in pairs, often subdivided. *Leaves* lance-linear, acute, scabrous, a little hairy, and somewhat glaucous: *sheaths* striate, roughish, lower ones hairy; *ligule* truncate. *Spikes* an inch and half to 2 inches in length, simple, on long peduncles, or at the ends of the slender branches, generally purple: *rachis* compressed, or plano-convex, pilose at the edges. *Spikelets* distant, alternate, distichously arranged. *Abortive spikelet* minute, subulate, on a linear, compressed, plumose pedicel which is nearly as long as the perfect spikelet; lower *glume* scabrous, terminating in a distinct awn; *paleæ* inconspicuous; *floret* neuter. *Perfect spikelet* sessile; *glumes* lance-linear, much acuminated, lower one bifid at apex. *Paleæ* nearly equal, ciliate on the margins; upper? one deeply bifid, with a twisted awn between the segments.

Hab. Sterile banks: old fields; roadsides: common. *Fl.* August. *Fr.* Sept.

5. A. FURCATUS, *Muhl.* Spikes digitate, or fasciculate, generally by 3's or 4's; abortive spikelet complete, staminate, awnless. *Beck, Bot. p.* 418. SPECIM. *Gray, Gram* 1. *no.* 63.

FORKED ANDROPOGON. *Vulgò*—Finger-spiked Wood grass.

Root perennial. *Culm* about 4 feet high, smooth, terete below, semi-terete, or concave on one side, above, often branching; *nodes* smooth. *Leaves* linear-lanceolate, nerved, smoothish, scabrous on the margin, pilose at base, lower ones very long: *sheaths* striate, smooth; *ligule* obtuse, sometimes ovate, fringed. *Spikes* 2 to 3 inches long, frequently purple, terminal and lateral, usually in 3's or 4's, (sometimes 5 or 6,) lateral ones often in pairs; *rachis* semi-terete, pilose on the angles. *Abortive spikelet* on a clavate, compressed, plumose pedicel; *glumes* lanceolate, acuminate lower one slightly keeled; *paleæ* pilose, awnless; *floret* staminate (sometimes neuter?). *Perfect spikelet* sessile: *glumes* unequal, scabrous; lower or outer one longer, flat, with 2 keels, upper one keeled, somewhat compressed; *paleæ* 2, (often 1 or 2 shorter accessory ones, as of an abortive floret,); upper? one bifid, with a tortuous awn between the segments.

Hab. Mica-slate range; low grounds: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. The Andropogons, although botanically related to the Sugar cane, and the Broom corn, are grasses of no value to the Agriculturist,—and are sure indications, where they abound, of a sterile soil, or of a negligent farmer. Six or seven additional species are enumerated in the U. States.

59. SORGHUM. *Pers. Nutt. Gen.* 94.

[Formed from *Sorghi*; the Asiatic name of one of the species.]

Spikelets in pairs, or threes. *Abortive spikelets* pedicellate, complete, staminate or neuter, awnless. *Perfect spikelet* sessile, 1-flowered; *Glumes* 2, coriaceous; *paleæ* 3, membranaceous, the upper one awned, the third or innermost one small, opposite to and connected with the collateral ciliate *scales*.

1. S. SACCHARATUM, Pers. *Culm erect, terete, solid; panicle large, loose; branches verticillate, long, spreading, at length nodding; glumes of the perfect spikelet hairy, persistent, embracing the seed.* Pers. Syn. 1. p. 101.
Holcus saccharatus. Willd. Sp. 4. p. 930. Ait. Kew. 5. p. 430.
SUGAR SORGHUM. Vulgò—*Broom Corn.*

Root *annual.* Culm 6 *to* 8 *or* 9 *feet high, and half an inch to an inch in diameter, terete, smooth, solid or filled with pith;* nodes *tumid, with a ring of short appressed hairs at the base of the sheaths.* Leaves 2 *feet or more in length, and* 2 *to* 3 *inches wide, lanceolate, acuminate, nerved, keeled, smooth, pubescent at base near the ligule, somewhat scabrous on the margin:* sheaths *smooth;* ligule *short, ciliate.* Panicle *large, diffuse;* branches *verticillate, nearly simple, long, flexuose;* nodose *at base, roughish, pubescent, with the spikelets in small clusters near the extremities.* Abortive spikelets *pedicellate, complete, mostly staminate, often in pairs;* glumes *herbaceous, striate, nearly smooth, pubescent on the margin;* paleæ *ciliate, awnless, the lower one larger;* scales *broad-cuneate, truncate.* Perfect spikelet *sessile;* lower glume *clothed with glossy appressed hairs;* upper one *smooth at base, hairy near the apex.* Paleæ 3, *fringed or ciliate-pubescent on the margin;* lower one *longest, lance-ovate;* upper one *broad-ovate, bifid at apex, with a flexuose awn between the segements which is rather longer than the spikelet; the* inner *or* third palea *smallest, linear-lanceolate (perhaps the rudiment of a second floret):* scales *broad-cuneate, truncate, ciliate.* Ovary *roundish-ovoid, smooth and shining.* Stigmas *greenish yellow.* Seed *elliptic, somewhat compressed.*

Hab. *Gardens, and Corn fields: frequent.* Fl. *Aug.* Fr. *Octo.*

Obs. *This is nearly allied to* Andropogon; *and some modern Botanists have referred it to that genus. It is cultivated, here, chiefly for the sake of its panicles which are made into brooms and clothes-brushes. Many farmers grow a sufficiency for their own domestic use: and some individuals cultivate it extensively, for the manufacture of the aforesaid articles. The* S. Vulgare, *or* Indian Millet,—*and the* S. cernuum, *called* Guinea Corn,—*are sometimes seen in the gardens of the curious; but can scarcely be enumerated, with propriety, among our cultivated plants. They are all natives of the East; and are the only species, I believe, which have been introduced into the U. States.*

60. HOLCUS. *L. Nutt. Gen.* 93.

[An ancient Greek name, of obscure Etymology.]

Spikelets 2-flowered; *glumes* herbaceous, boat-shaped, mucronate. *Florets* pedicellate; the lower one perfect, awnless; the upper one mostly imperfect, (staminate, or neuter,) awned on the back.

1. H. LANATUS, *L.* Panicle oblong, rather contracted; florets shorter than the glumes, the upper one with a recurved awn. *Beck, Bot. p.* 404.

Woolly Holcus. *Vulgò*—Feather grass. White Timothy.

Gallicè—Houque laineuse. Foin de mouton.

Root perennial, fibrous. *Culm* 18 inches to 2 feet high, and, with the leaves and sheaths, covered with a soft hoary pubescence. *Leaves* lanceolate, acute, 2 to 5 inches long: *sheaths* striate; *ligule* white, truncate, dentate. *Panicle* oblong, somewhat dense; branches hairy. *Glumes* whitish, often tinged with purple, roughish pubescent, ciliate on the keel; lower or outer one narrower, and rather shorter than the upper one; upper one 3-nerved. *Florets* both pedicellate, smooth and shining. *Paleæ* of the *perfect floret* nearly equal in length; the lower one broader, keeled. *Paleæ* of the *staminate floret* unequal; the lower one larger, keeled, with a curved or hooked awn on the back, near the apex.

Hab. Moist meadows, and low grounds: frequent. *Fl.* June. *Fr.* July.

Obs. This is a naturalized foreigner. Dr. *Muhlenberg* calls it "*excellens pabulum*,"—but our farmers consider it quite an inferior grass; and Mr. *George Sinclair* expresses the same opinion, in his valuable work, intituled *Hortus Gramineus*. It is the only species of the genus, as at present constituted, in the U. States; and although it was formerly united with the preceding, (which circumstance led me, inadvertently, to arrange it here,) I now apprehend it would have associated more naturally with the *Oat-grass Groupe*.

Div. VIII. Oryzeæ—*Rice Tribe.*

Inflorescence *Panicled.* Spikelets *solitary, mostly* 1-*flowered.* Flowers *perfect, or sometimes diclinous.* Glumes *wanting, or small and abortive.* Lower palea *subcoriaceous, keeled.* Stamens *varying in number, from* 1 *to* 6.

† *Flowers perfect: Stamens* 1 *to* 3.

61. LEERSIA. *Swartz. Nutt. Gen.* 66.

[Named after *John Daniel Leers;* a German Botanist.]

Spikelets 1-flowered, compressed. *Glumes* 0. *Paleæ* 2, compressed, awnless; lower one much broader, boat-shaped, prominently keeled. *Scales* ovate, membranaceous, smooth.

1. L. VIRGINICA, *Willd.* Paniele simple and slender; lower branches expanding; spikelets closely appressed; palcæ sparingly ciliate on the keel. *Beck, Bot. p.* 419. SPECIM. *Gray, Gram.* 2. *no.* 103.

VIRGINIAN LEERSIA. *Vulgò*—White grass.

Root perennial. *Culm* 2 to 3 feet long, slender, often oblique, or decumbent, geniculate, branched, striate, smoothish: *nodes* retrorsely pilose. *Leaves* linear-lanceolate, acute, keeled, striate, roughish: *sheaths* deeply striate, scabrous with minute retrorse prickles in the grooves, rarely pilose, lower ones loose; *ligule* short, obliquely truncate. *Panicle* terminal, slender, finally much exserted, somewhat secund; branches few and solitary, lower ones spreading, or divaricate. *Spikelets* on short pedicels, racemose on the branches, closely appressed, somewhat imbricated and unilateral, incurved and partly embracing the rachis, or common peduncle. *Lower palea* remarkably keeled and boat-shaped, compressed, mucronate with a prominent nerve on the outer side, scabrous with short acute scattered bristles, sparingly ciliate on the keel; *upper palea* lanceolinear, compressed, rather longer than the lower. *Stamens* 2? (1, *Torr.*).

Hab. Moist woodlands; borders of shaded swamps: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. I have examined a number of flowers, and constantly found *two* stamens.

2. L. ORYZOIDES, *Sw.* Paniele branched, diffuse, often sheathed at base; spikelets rather spreading; palcæ conspicuously ciliate on the keel. *Beck, Bot. p.* 419. SPECIM. *Gray, Gram.* 2. *no.* 104.

ORYZA—OR RICE-LIKE LEERSIA. *Vulgò*—Cut grass. Wild Rice.

Root perennial, creeping. *Culm* 3 to 5 feet high, striate, scabrous with minute retrorse prickles: *nodes* pubescent. *Leaves* lanceolate, acuminate, keeled, nerved, retrorsely and sharply scabrous, ciliate on the margin: *sheaths* nerved, very rough by reason of retrorse prickles in the grooves; *ligule* short, retuse. *Panicle* much branched; branches spreading in all directions, flexuose, the lower ones in threes or fours. *Spikelets* elliptic-oblong, pedicellate, a little spreading when mature, greenish white. *Palcæ* compressed, pectinate-ciliate on the keels; the lower one boat-shaped, 3-nerved; the upper one linear, 1-nerved, a little longer. *Stamens* 3.

Hab. Swamps; and along sluggish rivulets: common. *Fl.* Aug. *Fr.* Sept.

Obs. Neither of these Leersias is of any value to the farmer,—and this one is rather a nuisance along the rivulets, in our meadows. One other species is described in the U. States.

† † *Flowers Diclinous: Stamens* 6.

62. ZIZANIA. *L. Nutt. Gen.* 747.

[A Greek name; supposed to have been originally applied to Lolium.]

MONOICEOUS: *Staminate and Pistillate Flowers* in the same Paniele. *Staminate Spikelet* 1-flowered. *Glumes* 0, or very minute rudiments. *Palcæ* 2, herbaceous, nearly equal, lance-oblong, awnless. *Stamens* 6. *Pistillate Spikelet* 1-flowered, subulate. *Glumes* 0, or a minute, truncate, cup-form rudiment. *Palcæ* 2, herbaceous, unequal, linear, nerved; lower one longer, terminating in a straight awn. *Styles* 2. *Seed* enveloped in the plicate palcæ.

1. Z. AQUATICA, *Lambert.* Panicle pyramidal; lower branches spreading, bearing staminate flowers; upper branches nearly erect, bearing pistillate flowers; spikelets on clavate pedicels; awns long; seed slender, elongated. *Beck, Bot. p.* 419. Not? of *Willd.*
Z. clavulosa. *Mx. Am.* 1. *p.* 75. *Willd. Sp.* 4. *p.* 394. *Pers. Syn.* 2. *p.* 561. *Muhl. Catal. p.* 86. *Ejusd. Gram. p.* 270.
Also ? Z. palustris. *Willd. Sp.* 4. *p.* 395. *Muhl. Catal. p.* 86. *Ejusd. Gram. p.* 271.

AQUATIC ZIZANIA. *Vulgò*—Water Oats. Indian Rice. Reed.

Root perennial. *Culm* 4 to 6 or 7 feet high, and about half an inch in diameter, terete, fistular, glabrous. *Leaves* linear-lanceolate, nerved, keeled, 2 to 3 feet long, and an inch to an inch and half wide, smooth on both sides, serrulate on the margin: *sheaths* longer than the internodes, (shorter, *Ell.*) striate, smooth, the base surrounded with a ring of short silky appressed pubescence, at the nodes; *ligule* elongated, erect, lanceolate, nerved, lacerate-dentate, mostly purplish. *Panicle* terminal, large, loose, 1 to 2 feet long; branches verticillate; the lower ones expanding, bearing staminate flowers; the upper ones nearly erect, bearing pistillate flowers, which are somewhat racemose on the branches. *Staminate spikelet* 1-flowered: *Glumes* 0: *Palex* 2, nearly equal, purplish, minutely hispid, and ciliate on the nerves; lower one lance-oblong, acuminate, 5-nerved; the upper one linear-lanceolate, acute, 3-nerved. *Stamens* 6; *anthers* greenish yellow. *Scales* 2, small, lanceolate, acute. *Pistillate spikelet* acicular, about an inch long, 1-flowered: *Glumes* 0,—or a short, truncate, entire, sheath-like, or cup-form rudiment. *Palex* 2, unequal, linear, very long, scabrous, dark greenish purple; lower one longer, closely embracing the upper one, 3-nerved, terminating in a slender, straight, hispid awn as long as the spikelet; upper one linear, acuminate, bifid at apex, 2-nerved, margins inflexed, scarious. *Scales* lanceolate, acute. *Styles* 2, short: *stigmas* pencil-form. *Seed* slender, terete, sulcate on one side, about half an inch long.

Hab. Swampy rivulets: Brandywine: rare. *Fl.* Aug.—Sept. *Fr.* Octo.

Obs. This has only been found, as yet, at Marshall's Mill, and at Mr. Caleb Brinton's, near the forks of Brandywine. The flowers—especially the pistillate ones—are remarkably caducous. Mr. *Elliott* thought it might be a valuable grass, in overflowed or marshy meadows,—as Stock of all descriptions are fond of it. There is one other species in the U. States.

DIV. IX. OLYREÆ—*Olyra Tribe.*

INFLORESCENCE *Spiked, or Panicled.* Spikelets *few-flowered, Monoicous, or Polygamous.*

63. ZEA. *L. Nutt. Gen.* 732.

[Greek, *Zao*, to live; the seeds contributing eminently to the support of life.]

MONOICOUS: STAMINATE FLOWERS terminal, in paniculate racemes. *Spikelets* 2-flowered. *Glumes* 2, herbaceous, nearly equal. *Palex* membranaceous, awnless. PISTILLATE FLOWERS lateral, axillary, arranged in series on a *spadix*, which is closely enveloped by numerous spathe-like sheaths. *Spikelets* 2-flowered, one floret abortive. *Glumes* 2, carnose-membranaceous; lower one shorter, very broad, emarginate, ciliate. *Palex* carnose-membranaceous, concave, obtuse, awnless. *Style* 1, filiform, very long, exserted, pendulous. *Seed* compressed, orbicular-reniform, or cuneate.

1. Z. MAYS, L. *Leaves lanceolate, keeled, entire.* Willd. Sp. 4. p. 200.

Vulgò—*Corn. Indian Corn. Maize.*

Root *annual.* Culm 6 *to* 8 *or* 10 *f et high, and an inch to an inch and half in diameter, simple, (often producing suckers, or branches, at base), nodose, semi-terete, or with a broad channel on one side, smooth, solid with pith.* Leaves *lanceolate, acuminate, nerved, keeled,* 2 *to* 3 *feet long, and* 2 *to* 4 *or* 5 *inches wide, smooth beneath, pubescent on the upper surface, ciliate on the margin:* sheaths *striate, smooth, conspicuously pubescent along the margin;* ligule *short, obtuse, slightly pubescent and ciliate.* Staminate Flowers *in terminal paniculate racemes.* Spikelets *somewhat unilateral on the branches, mostly in pairs, one subsessile and the other pedicellate, each 2-flowered.* Glumes *herbaceous, nerved, pubescent, the lower one a little longer.* Paleæ 2 *to each floret, nearly equal, membranaceous, ovate-oblong, obtuse, subdentate and ciliate at apex.* Anthers *greenish yellow.* Scales *collateral, cuneate, truncate, fleshy and smooth.* Pistillate Flowers *in solitary, axillary, sessile spike* (1 *to* 3 *or* 4—*usually about* 2 *of these spikes, or Ears—on each plant*). Spikes *enveloped in spathe-like convolute sheaths,—the outer or lowest of these sheaths (being the one next the culm) thin and membranous, with two keels.* Spikelets 2-*flowered, arranged in longitudinal series on a cylindrical spadix, or receptacle,* 6 *to* 12 *inches long,—the series or rows, always in pairs:* florets *sessile, the lower one abortive.* Glumes 2; *the lower one rather shorter, very broad, deeply emarginate, or somewhat* 2 *lobed, ciliate, the upper one suborbicular.* Abortive floret *with* 2 paleæ; *the lower one orbicular, embracing the fertile floret, the upper one shorter, with the margins inflexed.* Fertile floret *with* 2 *or* 3 paleæ; *the lower one suborbicular, the upper one very broad (or sometimes* 2). Ovary *smooth, obovoid, obtuse or rounded, compressed at base.* Style *very long, filiform, projecting beyond the sheaths, pendulous, often purple:* Stigma *pubescent, bifid.* Seed *compressed, orbicular-reniform, or cuneate, often indented at apex, sitting transversely on the cylindric or conic receptacle, and partially imbedded in sockets formed by the persistent glumes and paleæ.*

Hab. *Cultivated fields: common.* Fl. *July—August.* Fr. *Sept.—October.*

Obs. *There are several* Varieties *of this plant,—with the seeds* yellow, white, *or sometimes* dark purple; *and one which is much smaller, and comes sooner to maturity. I have also seen a singular variety, in which every seed on the receptacle appeared to have its own husk, or spathe-like covering, in addition to the general envelope. The Indian Corn is one of the most interesting of the* Gramineæ—*rivalling the* Sugar Cane, *and the* Rice, *in intrinsic value,—and, in this region at least, ranking next in importance to* Wheat *itself. It is universally cultivated here; being generally the first in the routine of crops, on breaking up the Lay, or sod. The* seed *is planted early in May. No other species of the genus is known in the U. States.*

64. TRIPSACUM. *L. Nutt. Gen.* 116.

[Greek, *Tribo,* to grind; of which the applicability to this plant is not obvious.]

MONOICOUS; *Flowers* in digitate *spikes.* STAMINATE FL. *Spikelets* 2-flowered; the outer one staminate, the inner mostly neuter. *Glumes* 2; the outer or lower one coriaceous, the inner subcoriaceous. *Paleæ* membranaceous. PISTILLATE FL. *Spikelets* 3-flowered, imbedded in the rachis, with a foramen, or sinus, at each side of the base; one floret fertile, the others abortive. *Glumes* 2; the outer one indurated. *Paleæ* of each floret 2, membranaceous.

1. T. DACTYLOIDES, *L.* Spikes mostly 2 or 3, aggregated or digitate, terminal; staminate spikelets above, pistillate at the base. *Beck, Bot. p.* 399. SPECIM. *Gray, Gram.* 1. *no.* 40.

FINGER-LIKE TRIPSACUM. *Vulgò*—Gama Grass. Sesame Grass.

Root perennial. *Culm* erect or oblique, 4 to 5 or 6 feet high, somewhat compressed, channelled on one side, smooth, solid with pith: *nodes* smooth, rather tumid, with a dark brown contracted ring. *Leaves* large, often 3 feet long, and an inch to an inch and half wide, linear-lanceolate, keeled, smooth beneath, roughish on the upper surface, serrulate on the margin, contracted and pilose at base: *sheaths* nerved, smooth; *ligule* very short, ciliate. *Spikes* generally 2 or 3 (rarely 1, or 4), terminal, digitate; *rachis* articulated. *Staminate flowers* above: *spikelets* somewhat in pairs, on two sides of the triangular rachis, each 2-flowered; the inner one usually neuter, sometimes both staminate. *Glumes* nearly equal; the lower or outer one coriaceous, nerved, lance-oblong, margins thin and inflexed; upper one subcoriaceous, boat-shaped. *Paleæ* of each floret 2, very thin and membranaceous, nearly as long as the glumes. *Stamens* 3; *anthers* orange-colored, becoming dark purple. *Scales* 2, cuneate, emarginate. *Pistillate flowers* near the base of the spikes: *spikelets* 4 to 6 or 8 on each spike, imbedded in recesses of the semi-cylindrical rachis, each 3-flowered; the inner floret fertile, the others abortive. *Glumes* 2, nearly equal in length; the outer one ovate, rather acute, indurated and polished, embracing the florets, closing the cavity in the rachis, except a bearded foramen or sinus, at each side of its base; the inner one subcoriaceous, somewhat boat-shaped, acuminate. *Paleæ* very thin and membranaceous, 2 to each floret,—but, by the abortion of 2 of the florets, they appear like 6 paleæ enveloping one ovary. *Scales* 2, oblong, truncate. *Ovary* lance-ovoid, with the rudiments of 3 stamens at base. *Style* 1; *stigmas* 2, large, plumose or villous, dark purple. *Seed* ovoid, smooth.

Hab. Great Valley, near the Warren Tavern: rare. *Fl.* July. *Fr.* Sept.

Obs. This stout and very remarkable grass has, as yet, only been found in the above locality, in Chester county;—where it was first detected by Mr. JOSHUA HOOPES, in 1828. It is difficult to preserve the spikes entire, in dried specimens,—as they incline to separate readily at the articulations of the rachis. A few years ago, this grass was much extolled, by some writers in the West, as an article of Fodder for Stock. The leaves and young plant may probably answer very well, where better cannot be had;—but any one who will examine the coarse culms of the mature plant, may soon satisfy himself that it can never supersede the good hay of this region,—nor be as valuable, in any respect, as common Indian-corn fodder. It is the only species of the genus in the U. States:—the T. *monostachyon* of some authors, being nothing more than a single-spiked *Variety*.

[Anychia dichotoma. *Pentandria Monogynia.*]

Order 3. Trigynia.

65. MOLLUGO. *L. Nutt. Gen.* 125.
[The ancient name of *Galium Mollugo*;—which this plant somewhat resembles.]

Calyx inferior, deeply 5-parted, colored inside. *Corolla* 0. *Stamens* 3 to 5. *Capsule* 3-celled, 3-valved, many-seeded.

Herbaceous: leaves mostly verticillate; flowers axillary, pedunculate, solitary, or subumbellate. *Nat. Ord.* 140. *Lindl.* CARYOPHYLLEÆ.

1. M. VERTICILLATA, *L.* Stem prostrate, branched; leaves verticillate, oblanceolate, or obovate-cuneate, rather acute; peduncles 1-flowered, solitary, or subumbellate. *Beck, Bot. p.* 50.

VERTICILLATE MOLLUGO. *Vulgò*—Carpet weed. Indian Chickweed.

Root annual. *Stem* branching from the root in all directions, 4 to 8 or 12 inches long, appressed to the earth; subdivisions dichotomous. *Leaves* in verticils of about 6, unequal, varying from oblanceolate and rather acute, to obovate-cuneate, and spatulate, about an inch long, entire, and somewhat fleshy or succulent. *Peduncles* shorter than the leaves, axillary, solitary; or frequently in a kind of sessile umbel. *Calyx* divided almost to the base; segments erect, oblong, rather obtuse, 3 nerved, with the margins and inside white. *Stamens* 3, or not unfrequently 4. *Stigmas* 3, sub-sessile. *Capsule* ovoid-oblong, trisulcate, longer than the calyx, a little uneven by the prominence of the enclosed seeds. *Seeds* numerous, small, subreniform, or cochleate, purple, shining, striate on the back with about 8 darker purple nerves, or ridges.

Hab. Cultivated grounds: Gardens, &c. common. *Fl.* July—Sept. *Fr.* Aug.—Octo.

Obs. This is the only known species in the U. States.

66. LECHEA. *L. Nutt. Gen.* 126.

[Named in honor of *John Leche*; a Swedish Botanist.]

Calyx inferior, 3-sepalled, with 2 small accessory sepals, or *bracts*, persistent. *Petals* 3, lance-ovate, inconspicuous. *Stamens* 3 to 12 (the number mostly ternary). *Stigmas* 3, scarcely distinct. *Capsule* 3-celled, 3-valved; valves nerved, or septiferous in the middle. *Seeds* 1 in each cell, oblong, angled at one side, acute at each end.

Suffruticose roughish plants; paniculately branched above; leaves alternate or opposite; flowers numerous, small. *Nat. Ord.* 134. *Lindl.* CISTINEÆ.

1. L. VILLOSA, *Ell.* Stem erect, hirsute; branches villous, radical ones prostrate; leaves lance-oblong, mucronate, hairy; panicle leafy, pyramidal; flowers in fasciculate racemes, somewhat secund, small. *Beck, Bot. p.* 36.

L. minor. *L.*

L. major. *Willd? Sp. 1. p.* 495. *Mx. Am. 1. p.* 76. *Pers. Syn. 1. p.* 112. *Ait? Kew. 1. p.* 185. *Muhl. Catal. p.* 15. *Pursh, Am. 1. p.* 90. *Bart. Phil. 1. p.* 75. *Bigel. Bost. p.* 47. *Torr. Fl. 1. p.* 160. *Ejusd. Comp. p.* 74. *Lindl. Ency. p.* 74. *Eat. Man. p.* 200. Not of *Linn.*

VILLOUS LECHEA.

Root perennial. *Stem* 1 to 2 feet high, erect, often sending out radical prostrate branches; paniculate above; young branches villous with long, white, spreading hairs. *Leaves* on the radical branches opposite, on the stem and panicle alternate, elliptic lanceolate, somewhat acute at each end, more or less pilose,—those on the stem about an inch long. *Panicle* leafy, with short axillary subdivisions, or branches. *Flowers* small, numerous, in racemose clusters at the ends of the principal and secondary branches. *Sepals* lance-ovate, keeled; *bracts* lance-linear. *Petals* linear-lanceolate, about as long as the sepals, brown, inconspicuous. *Capsule* subglobose.

Hab. Woodlands, on the Mica-slate hills: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. We have a plant which associates with this species, and seems to be intermediate between it and L. *minor*. It is more common than L. *villosa*,—and is in

fact, the plant intended in *Florul. Cestrica*, by the name of L. *major*. It is usually a foot to 18 inches high—the *stem* erect, clothed with whitish appressed hairs—the *leaves* of the same elliptical form as those of L. *villosa*, but not more than half the size—those on the stem often ternate, or nearly verticillate by threes—the branches quite leafy. In habit, it certainly resembles L. villosa; but if only a variety, it is a pretty distinct and very constant one. The true L. *villosa* was first collected, here, by Mr. Geo. W. Hall, in 1829.

2. L. minor, *Pursh*. Stem assurgent, branched, smoothish; leaves lance-linear, acute; panicle diffuse, leafy; branches elongated; flowers racemose. *Beck, Bot. p.* 36. Not of *Linn.*

Lesser Lechea. *Vulgò*—Pin weed.

Root perennial. *Stem* 9 to 15 inches high, slender, frutescent, often decumbent, or curved at base, branched, smoother than the preceding, the hairs closely appressed. *Leaves* nearly an inch long, alternate, narrow, lance-linear, or oblanceolate-linear, acute, often a little falcate, sparingly pilose and ciliate, margin somewhat revolute. *Panicle* rather large and diffuse, with minute bracts on the ultimate branches. *Flowers* nearly twice as large as those of the preceding species, pedicellate, racemose. *Sepals* obovate, obtuse, 3-nerved, pilose with appressed hairs on the back; *bracts* minute, linear. *Petals* oblong, membranaceous, brown, cohering at apex, finally detached at base, and closely embracing the summit of the capsule, so as readily to be confounded with it on mere inspection. *Capsule* roundish-ovoid, or obovoid, rather longer than the calyx.

Hab. Dry, sandy banks; borders of woodlands: common. *Fl.* Aug. *Fr.* Sept.

Obs. Two or three additional species are enumerated in the U. States. The L. *racemulosa*. *Mx.* is considered by Professors *Torrey* and *Hooker* as not specifically distinct from L. *minor;* nor can I perceive any material difference between our L. *minor* and the plant labelled L. *racemulosa*, in the Muhlenbergian Herbarium.

[Stellaria media. *Decandria Trigynia.*]

[Amaranthus albus. *Monoecia Triandria.*]

CLASS IV. TETRANDRIA.

Order 1. Monogynia.

A. Ovary inferior; *or adnate to the tube of the Calyx.*

a. *Corolla monopetalous—or* 0.

67. CEPHALANTHUS. *L. Nutt. Gen.* 129.
[Greek, *Kephale*, a Head, and *Anthos*, a Flower; the flowers growing in heads.]

Calyx small, angular, 4-toothed. *Corolla* tubular, slender, funnel-form, the limb 4-cleft. *Style* much exserted; *stigma* capitate. *Capsule* obversely pyramidal, 2-celled, 2-seeded, bipartile. *Receptacle* globose, hairy.

A Shrub: Leaves entire, opposite or ternate; flowers in globose pedunculate heads without an involucre, axillary and terminal. *Nat. Ord.* 190. *Lindl.* Cinchonaceæ.

1. C. OCCIDENTALIS, *L.* Leaves petiolate, opposite or ternate, ovate or oval, acuminate, smooth; peduncles long, often ternate at the extremities of the branches. *Beck, Bot. p.* 161. Icon, *Bart. Am. 3. tab.* 91.

WESTERN CEPHALANTHUS. *Vulgò*—Button Bush. Pond Dog-wood.

Stem 3 to 5 feet high (some old plants 7 or 8 feet high, and 6 or 7 inches in diameter), branched; branches opposite. *Heads* of flowers about an inch in diameter, on axillary or terminal peduncles 2 to 3 inches long. *Calyx* minute, persistent; segments ovate. *Corolla* white; the tube about one third of an inch long, somewhat funnel-form, hairy within, smooth externally; segments obtuse. *Stamens* short, within the tube of the corolla. *Style* filiform, twice as long as the corolla. *Capsule* tapering at base, 2-celled; cells semi-bivalved; outer valve angular, inner valve flat, cuneate. *Seed* solitary, obovate-cuneate, somewhat triangular, partially coated with a white suberose kind of *arillus*, which is much thickened at the apex.

Hab. Margins of swamps and rivulets: frequent. *Fl.* July.—Aug. *Fr.* Sept.

Obs. This is sometimes a troublesome shrub in swampy meadows. Mr. *Elliott* says the inner bark of the root is used, in the South, as a remedy for obstinate coughs. As it is moderately bitter, it may probably be useful in certain cases. It is the only species known in the U. States.

68. DIPSACUS. *L. Nutt. Gen.* 130.

[Greek, *dipsao*, to thirst; the stem-leaves holding water at their junction.]

Calyx minute, cup-shaped, entire. *Corolla* tubular, the limb 4-cleft, erect. *Seed* 1, crowned by the calyx. *Receptacle* conic, paleaceous.

Herbaceous biennials: aculeate, or roughly pilose; leaves opposite, mostly connate at base; flowers in terminal ovoid heads, with a many-leaved involucre at base. *Nat. Ord.* 181. *Lindl.* DIPSACEÆ.

1. D. SYLVESTRIS, *L.* Leaves sessile, crenate-dentate, or serrate; involucre curved upward, longer than the head of flowers; chaff of the receptacle straight, flexible. *Beck, Bot. p.* 165.

WILD DIPSACUS. *Vulgò*—Wild Teasel.

Root biennial. *Stem* 3 to 5 feet high, branched, angular and prickly. *Radical leaves* lance-oblong, crenate; *stem leaves* sessile, somewhat connate, serrate; those of the branches lanceolate, often nearly entire; all more or less prickly on the mid-rib, and sometimes on the margin. Leaves of the *involucre* lance-linear, pungent at apex, aculeate, curved upward and inward, unequal, the longest exceeding the head. *Heads* of flowers oblong-ovoid; *corolla* pale purple; the tube slender, and pubescent externally. *Scales*, or chaff of the receptacle, oblong-cuneate, keeled, abruptly tapering into a straight flexible awn-like acumination, longer than the flowers; those at the top of the head longest. *Seed* solitary, angular, scabrous, crowned with the small cup-form hirsute calyx.

Hab. Borders of fields; road-sides, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. This foreigner is becoming quite abundant in many neighborhoods,—particularly in the Great Valley,—where it bids fair to be something of a nuisance to the farms, if not attended to. The *flowers* commence opening in a ring, round the *middle of the head*, and extend gradually to the top and bottom of it.

2. D. Fullonum, L. *Leaves connate, serrate; involucre spreading, or reflexed, shorter than the head of flowers; chaff of the receptacle recurved, rigid.* DC. Prodr. 4. p. 645.

Fullers' Dipsacus. Vulgò—*Fuller's Teasel.*

Gall.—*Chardon à Foulon.* Ger.—*Die Kardendistel.* Hisp.—*Cardéncha.*

Root *biennial.* Stem *4 to 5 feet high, branched, angular, prickly.* Radical leaves *obovate, narrowed to a petiole at base;* stem-leaves *connate-perfoliate, serrate, upper ones entire, all smoothish. Leaves of the* involucre *lanceolate, mucronate, rigid, spreading, or recurved, shorter than the head.* Heads *of flowers cylindric, or elliptical;* corolla *pale purple.* Scales *of the receptacle cuneate-oblong, keeled, terminating in a rigid subulate recurved acumination, bristly-ciliate on the margin.*

Hab. *Cultivated Lots: not common.* Fl. *July.* Fr. *September.*

Obs. *This is cultivated by some of our Cloth manufacturers,—but not very extensively. The recurved points of the* chaff, *on the mature heads, are used as a kind of card, to raise the nap on woollen cloths. These two are the only species of the genus which have yet been introduced into the U. States.*

69. GALIUM. *L. Nutt. Gen.* 131.

[Greek, *Gala*, milk; one of the species having been used to curdle milk.]

Calyx minute, 4-toothed. *Corolla* 4-parted (rarely 3-parted), rotate. *Stamens* short. *Style* short, bifid (styles 2. *DC.*). *Fruit* didymous, roundish, smooth, or hispid. *Seeds* 2.

Herbaceous: stem slender, 4-angled, branching, often prickly; leaves verticillate, flowers somewhat corymbose-paniculate; peduncles terminal and axillary. *Nat. Ord.* 189. *Lindl.* Stellatæ.

† *Fruit smooth.*

1. G. trifidum, *L.?* Stem procumbent or assurgent, angles retrorsely scabrous; leaves in fives and fours, linear-oblong, obtuse, cuneate at base, marginal prickles pointing backwards; peduncles mostly in 3's, rather short: corolla generally 3-parted, and stamens 3. *Beck, Bot. p.* 161.
G. Claytoni. *Mx. Am.* 1. *p.* 78. *Hook. Am.* 1. *p.* 288. Also, *Pers. Syn.* 1. *p.* 126.

Three-cleft Galium. *Vulgò.*—Goose grass. Ladies Bed-straw.

Root perennial. *Stem* procumbent and assurgent, 1 to 2 or 3 feet long, much branched. *Leaves* generally in fours, sometimes in fives on the stem, linear-elliptic, (sometimes oblanceolate,) obtuse, narrowed or cuneate at base, mid-rib and margins retrorsely aculeate. *Peduncles* mostly in threes, axillary, or subterminal, rather short, slender, spreading. *Corolla* white, small, mostly 3-lobed: lobes obtuse. *Stamens* shorter than the corolla, always 3 when the corolla is 3-lobed. *Style* as long as the stamens, bifid; *stigmas* 2, globose.

Hab. Moist low grounds, and thickets: frequent. *Fl.* July. *Fr.* Sept.

Obs. Prof. *Hooker* thinks this may be distinct from the G. *trifidum* of Europe, which, he says, is a more slender plant than ours.

2. G. TINCTORIUM, *L.?* Stem erect, slender, smooth; leaves in sixes and fours, lance-linear, rather obtuse, marginal prickles pointing forward, or diverging; peduncles elongated, often in threes, and somewhat corymbosely subdivided; corolla 4-parted. *Beck, Bot. p.* 162. DYER'S GALIUM. *Vulgò*—Dyer's Goose grass. Wild Madder.

Root perennial. *Stem* 12 to 18 inches high, generally erect, paniculately branched. *Leaves* mostly in sixes on the stem, and in fours on the branches, narrower and more lanceolate than in the preceding, occasionally somewhat acute, margins inclining to be revolute, with the prickles generally pointing towards the apex, sometimes diverging, or divaricate. *Peduncles* mostly terminal, in threes, longer than in the preceding, each one subdivided at the end, or 2 or 3-flowered. *Corolla* white, 4-parted; lobes rather acute. *Style* bifid; *stigmas* 2, globose. *Fruit* when first mature containing a purple juice, at length dry.

Hab. Moist woodlands, and low grounds: frequent. *Fl* June. *Fr.* Aug.

Obs. Dr. *Torrey* thinks this is nothing more than a *variety* of the preceding. It is certainly nearly allied to it; but, so far as I have observed, the differences above noted are pretty constant. This is the plant which we have always taken for G. *tinctorium*, here; but it is proper to remark, that the specimens so labelled, in *Muhlenberg's Herbarium*, and in that of the Academy of Natural Sciences, at Philadelphia, appear to be somewhat different;—the whole plant being of a lighter color, or more glaucous, the branches very slender, the stem-leaves more linear, and the fruit smaller. The early travellers among our Aborigines inform us, that the roots of G. *tinctorium* are used for dyeing porcupine quills, and other savage ornaments, of a red color.

3. G. ASPRELLUM, *Mx.* Stem diffuse, much branched, retrorsely aculeate; leaves in sixes, fives, and fours, lanceolate, acuminate, mid-rib and margins armed with sharp uncinate retrorse prickles; peduncles rather short, slender, in twos or threes. *Beck, Bot. p.* 162. G. Pennsylvanicum. *Muhl. Catal. p.* 15. Not of *Bart. Phil.* ROUGHISH GALIUM.

Root perennial. *Stem* flaccid, 2 or 3 feet long (often 4 or 5 feet long, when supported on bushes), sharply scabrous with retrorse prickles, much branched above, forming diffuse entangled bunches. *Verticils* rather approximate. *Leaves* mostly in sixes and fives, sometimes in fours, the margins and mid-rib uncinately aculeate; stem leaves oval-lanceolate, or lance-obovate, obtuse, mucronate; those on the branches lanceolate, acuminate, scarious at the apex. Flower-bearing branches divaricate; flowers numerous, small. *Peduncles* in pairs, or threes, often subdivided, very slender, and rather short. *Corolla* very white; lobes acute, or acuminate. *Style* bifid; *stigmas* 2, globose.

Hab. Swampy thickets: ditch banks: frequent. *Fl.* July. *Fr.* Sept.

Obs. Prof. *Hooker* seems to think this is identical with the preceding, or with our G. *trifidum*; but if he were to see them growing in their native localities, I apprehend he would change his opinion. The sharp hooked prickles on the leaves and branches of this species render them quite adhesive to objects with which they come in contact.

† † *Fruit hispid.*

4. G. APARINE, *L.* Stem flaccid, procumbent, retrorsely aculeate, pubescent near the joints; leaves mostly in eights, long, linear-oblanceolate, mucronate, mid-rib and margins aculeate; peduncles elongated, simple and bifid, axillary; fruit large. *Beck, Bot. p.* 162.

Vulgò—Common Cleavers. Goose grass. Robin-run-the-Hedge.
Gall.—Grateron. *Germ.*—Das Klebkraut. *Hisp.*—Amor del Hortelano.

Root annual. *Stem* 4 to 6 or 8 feet long, procumbent when not supported; branches short. *Verticils* rather remote. *Leaves* in 8's or 6's, an inch and half long, sometimes obovate-lanceolate, tapering to the base. *Flowers* mostly on axillary elongated peduncles. *Corolla* white. *Fruit* rather large, adhesive by its hooked bristles.

Hab. Along fences; and in rich shaded places: frequent. *Fl.* May. *Fr.* July.

Obs. This species is generally given as a native; but to me it always had the appearance of an introduced plant.

5. G. TRIFLORUM, *Mx.* Stem flaccid, smoothish, the angles somewhat aculeate; leaves in fives and sixes, elliptic-lanceolate, mucronate, slightly ciliate on the margin; common peduncles axillary and terminal, elongated, mostly 3-flowered at the extremity; flowers pedicellate; fruit small. *Beck, Bot. p.* 162.
G. cuspidatum. *Muhl. Catal. p.* 16. *Florul. Cestr. p.* 19. Also, *Ell. Sk.* 1. *p.* 197. *DC. Prodr.* 4. *p.* 601.
G. Pennsylvanicum. *Bart. Phil.* 1. *p.* 83. Not of *Muhl.*
Also, G. brachiatum. *Florul. Cestr. p.* 19. Not of *Muhl.* and perhaps not of *Pursh.*

THREE-FLOWERED GALIUM.

Root perennial. *Stem* weak, often procumbent, 2 to 3 or 4 feet long, with a few short axillary diverging branches. *Leaves* somewhat membranaceous, mostly in sixes, elliptic, or obovate-lanceolate, attenuated at base, sprinkled with hairs on the upper surface, mid-rib minutely aculeate, and margins ciliate: stem leaves mucronate, those on the branches often acuminate. *Flowering branches* axillary and terminal, trichotomous, or not unfrequently dichotomous. *Corolla* nearly white; lobes ovate, acute, or acuminate. *Fruit* clothed with white uncinate hairs.

Hab. Woodlands, and moist shaded grounds: frequent. *Fl.* July. *Fr.* Sept.

Obs. The plant called G. *brachiatum*, in *Florul. Cestrica*, proves to be nothing but the present species.

6. G. PILOSUM, *Ait.* Stem nearly simple, ascending, hirsute on the angles; leaves in fours, ovate or oval, indistinctly 3-nerved, slightly mucronate, very hairy on every part; peduncles elongated, dichotomous, often 3-flowered at the extremity. *Beck, Bot. p.* 163.
G. puncticulosum. *Mx? Am.* 1. *p.* 80. *Bart. Phil.* 1. *p.* 83. Also? *Beck, Bot. p.* 162. var. pilosum. *DC. Prodr.* 4. *p.* 601.
Also, G. punctatum. *Pers. Syn.* 1. *p.* 128.
Also ? G. bermudianum. *Willd. Sp.* 1. *p.* 596. *Pers. Syn.* 1. *p.* 128. *Pursh, Am.* 1. *p.* 104. *Nutt. Gen.* 1. *p.* 93. *Torr. Fl.* 1. *p.* 169. *Ejusd. Comp. p.* 80. *Eat. Man. p.* 152. Not of *Muhl.* nor *Ell.*

HAIRY GALIUM.

Root perennial. *Stem* 1 to 2 feet high, nearly simple, often cespitose, or several from the same root, ascending, hirsute; branches axillary, expanding. *Leaves* ovate, or oval, obtuse, about an inch long and half an inch wide, pellucid-punctate, covered with roughish hairs, and ciliate on the margin, the mid-rib distinct, but

the lateral nerves very obscure. *Peduncles* dichotomous, each division generally bearing 3 flowers on short footstalks. *Corolla* reddish brown; lobes acute. *Fruit* covered with white uncinate bristles.

Hab. Dry, sterile woodlands, and thickets: frequent. *Fl.* June. *Fr.* Aug.

Obs. There seems to be much confusion respecting this plant, and its synonyms. It appears to be quite distinct from the specimens labelled G. *bermudianum*, in the Herbarium of the *Philadelphia Academy*,—which were collected in Bermuda. The G. *bermudianum*, in *Muhlenberg's* Herbarium, is a *white* flowered species, with the leaves lanceolate, and strongly 3-nerved. Dr. *Torrey* says he could not distinguish it from G. *pilosum*; but Dr. PICKERING and myself, on a recent examination, concurred in the opinion that it was much more nearly allied to our G. *boreale*. It is true, the joints of the stem, and the mid-rib and margins of the leaves were somewhat more pilose,—but in every other feature it appeared to be identical with the G. *boreale* of this County.

7. G. CIRCÆZANS, *Mx.* Stem erect, smoothish; leaves in fours, oval, or lance-ovate, rather obtuse, smoothish, 3-nerved, margins and nerves ciliate; peduncles divaricate, few-flowered; fruit subsessile, nodding. *Beck, Bot. p.* 163.

G. brachiatum. *Muhl. Catal. p.* 16. Not of *Pursh*, nor of *Fl. Cestr.*

CIRCÆA-LIKE GALIUM. *Vulgò*—Wild Liquorice.

Root perennial. *Stem* 12 to 18 inches high, often branched near the base, smoothish, or slightly pubescent on the angles. *Leaves* an inch to an inch and half long, and half an inch to three quarters wide, oval, or ovate, the lower ones often roundish-obovate and the upper ones lance-ovate, obtuse, or sometimes rather acute, distinctly 3-nerved, margin and nerves ciliate, and the surface sprinkled with short appressed hairs on both sides. *Peduncles* nearly simple, finally geniculate; *flowers* alternate, subsessile. *Corolla* purplish white; lobes cuspidate. *Fruit* uncinately hispid.

Hab. Rich woodlands: frequent. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. This species is easily recognized by the *sweet liquorice-like* taste of the leaves. There is a *variety* of this, of larger growth, with pellucid-punctate leaves, and, in some instances, almost as hairy as G. *pilosum*. D. TOWNSEND, Esq. has very stout specimens of it from near Easton, in this State. Dr. *Torrey* queries whether it may not possibly be the G. bermudianum, of *Pursh*.

8. G. LANCEOLATUM, *Torr.* Stem erect, smooth; leaves in fours, lanceolate, or ovate-lanceolate, rather acute, 3-nerved, smooth, margin and nerves somewhat ciliate; peduncles divaricate; fruit sessile. *Beck, Bot. p.* 163.

G. circæzans, *var.* lanceolatum. *N. Y. Catal. p.* 23. *DC. Prodr.* 4, *p.* 601.

G. Torreyi. *Bigel. Bost. p.* 56.

LANCEOLATE GALIUM.

Root perennial. *Stem* 12 to 18 inches high, quite smooth, except at the joints, somewhat branched, joints rather distant. *Leaves* an inch and half to two and a half inches long, and half an inch to an inch wide, lanceolate, or often ovate-lanceolate, tapering to a point, rather thin and membranaceous, nearly smooth, margin ciliate, mid-rib somewhat scabrous with short bristles. *Peduncles* long, subterminal, trichotomous, finally divaricate. *Corolla* brownish purple, sometimes whitish; lobes acuminate. *Fruit* sessile, uncinately hispid.

Hab. Moist woodlands: frequent. *Fl.* July. *Fr.* Sept.

Obs. This is undoubtedly nearly allied to the preceding; but seems to be constantly and sufficiently distinct. The leaves, moreover, so far as I have observed, have not the *sweet taste* which characterizes the G. *circæzans*.

9. G. BOREALE, *L*? Stem erect, smooth, branched above; branches short; leaves in fours, linear-lanceolate, rather obtuse, 3-nerved, smooth, margin somewhat revolute and ciliate-scabrous; flowers in a terminal panicle. *Torr. Fl.* 1. *p.* 169.
G. bermudianum? *Muhl. Catal. p.* 16. *Ell. Sk.* 1. *p.* 196. Not of *Pursh, and others.*
G. strictum. *N. Y. Catal. p.* 23.
G. septentrionale. *Bigel. Bost. p.* 54. *Beck, Bot. p.* 163. Also, *DC. Prodr.* 4. *p.* 601.

NORTHERN GALIUM.

Whole plant rather glaucous. *Root* perennial, somewhat ligneous, fibrous at the joints. *Stem* 1 to 2 feet high, often in bunches, or a considerable number from the same root, branched above, smooth and a little shining, puberulent at the joints. *Leaves* an inch to an inch and three quarters long, and an eighth to a third of an inch wide, linear-lanceolate, tapering to a narrow point, but rather obtuse at the extremity, distinctly 3-nerved, slightly scabrous on the nerves, and minutely ciliate on the margin. *Panicle* terminal, subpyramidal, or thyrsoid; branches diverging, peduncles frequently trichotomous; *bracts* ovate, or obovate, mostly obtuse. *Corolla* white; segments lance-ovate, acute, 3-nerved. *Fruit* small, hispid; hairs short, scarcely uncinate.

Hab. Banks of the Schuylkill, at Black Rock: rare. *Fl.* July. *Fr.* Sept.

Obs. Our plant has longer leaves than the European specimens which I have seen,—and the panicles are not quite so dense-flowered; but I do not think it is entitled to be made a distinct species. As already mentioned, under No. 6, I believe this is the G. *bermudianum*, or *bermudense*, of *Muhlenberg's* Herbarium;—but probably not the plant to which that name was applied, by *Linnæus*. The root of this species is also said to be used, by the Aborigines, to dye a red color. Six or seven additional species have been enumerated in the U. States.

70. RUBIA. *L. Nutt. Gen.* 132.

[Latin, *Ruber*, red; the color produced by its roots.]

Calyx 4-toothed. *Corolla* sub-rotate, 4 or 5-parted. *Stamens* short, (sometimes 5 or 6). *Style* 1, bifid. *Fruit* didymous, subglobose, succulent, smooth.

Herbaceous, or suffruticose: stem 4-angled, diffuse, branching, mostly flaccid; leaves verticillate, and the general habit that of *Galium*. *Nat. Ord.* 189. *Lindl.* STELLATÆ.

1. R. TINCTORUM, *L. Herbaceous; stem flaccid, aculeate on the angles; leaves mostly in sixes, subpetiolate, lanceolate; peduncles axillary, trichotomous.* DC. Prodr. 4. *p.* 589.

DYERS' RUBIA. Vulgò—*Madder. Dyer's Madder.*

Gallicè—*La Garance.* Germ.—*Die Faerber-Roethe.* Hisp.—*Rubia.*

Root *perennial, large.* Stem *procumbent when not supported, 2 to 3 or 4 feet long, rather coarse, branching, pubescent at the joints; angles prominent, sometimes more than* 4, *aculeate with short retrorsely curved prickles.* Leaves *oblong-lanceolate, with a short acumination, narrowed almost to a petiole at base, midrib and*

margin retrorsely aculeate. Flower-bearing branches *axillary, opposite.* Corolla *brownish yellow, often 5-parted ;* lobes *acuminate.*

Hab. *Gardens, and small lots : not common.* Fl. *July.* Fr. *Sept.*

Obs. *This plant is very nearly allied to* Galium. *The large root affords a valuable red coloring matter ; and is occasionally cultivated, by some families, as a domestic dye-stuff. There is one native species in the Southern States.*

71. DIODIA. *L. DC. Prodr.* 4. *p.* 561.

[Greek, *Dia,* through, or by, and *Odos,* Way; from its growing along road sides.]

Calyx 2 or 4-toothed. *Corolla* funnel-form ; limb 4-lobed. *Capsule* obovoid, or obversely pyramidal, crowned with the persistent calyx, 2-celled, bipartile ; cells 1-seeded.

Suffruticose : stems round, or quadrangular ; leaves opposite, connected at base by a sheathing bristly-ciliate stipule ; flowers small, axillary, sessile. *Nat. Ord.* 190. *Lindl.* CINCHONACEÆ.

1. D. TERES, *Walt.* Stem terete, diffuse, roughish pubescent ; leaves linear-lanceolate, sessile, serrulate on the margin and keel ; bristles of the stipule longer than the fruit ; calyx 4-toothed. *Beck, Bot. p.* 161.

Spermacoce diodina. *Mx. Am.* 1. *p.* 82. *Muhl. Catal. p.* 15. *Pursh, Am.* 1. *p.* 105. *Nutt. Gen.* 1. *p.* 94. *Bart. Phil.* 1. *p.* 83. *Ell. Sk.* 1. *p.* 189. *Torr. Fl.* 1. *p.* 170. *Ejusd. Comp. p.* 80. *Florul. Cestr. p.* 19. *Eat. Man. p.* 353.

TERETE DIODIA. *Vulgò*—Button weed.

Root annual. *Stem* 4 to 12 inches high, diffusely branched, covered with a short pubescence, and sprinkled with longer white bristly hairs ; branches spreading, lower ones procumbent. *Leaves* an inch to an inch and a half long, and about one fourth of an inch wide, somewhat scabrous, margin and keel aculeate-serrulate. *Stipules* membranaceous, fringed with 6 or 8 long bristles between the leaves on each side of the stem. *Flowers* generally solitary, and opposite, in the axils of the leaves. *Calyx-segments* lanceolate, acute (obtuse, *Torr.*), ciliate. *Corolla* mostly pale red, minutely pubescent. *Fruit* somewhat quadrangular-obovoid, bisulcate, hispid.

Hab. Sandy banks; roadside, from Strode's Mill to Brandywine. *Fl.* Aug. *Fr.* Oct.

Obs. This plant is very abundant in the S. western parts of the county,—particularly along the Marlborough Street road ; but I believe is scarce in the N. eastern portion. Three or four other species, as the genus is now constituted, occur in the U. States.

72. HEDYOTIS. *L. Hook. Am.* 1. *p.* 286.

[Gr. *Hedys,* sweet, *Ous, otos,* Ear ; from a supposed virtue in curing deafness.]

Calyx 4-toothed, or 4-parted. *Corolla* tubular ; limb spreading, 4-lobed. *Capsule* subglobose-didymous, half superior, 2-celled, 2-valved, many-seeded, opening at apex transversely, or across the dissepiment.

Herbaceous, or suffruticose at base : stem mostly quadrangular, dichotomous; leaves opposite, connected at base by a short stipule ; flowers axillary or terminal. *Nat. Ord.* 190. *Lindl.* CINCHONACEÆ.

1. H. CÆRULEA, *Hook.* Stem erect, setaceous, dichotomous ; radical leaves spatulate-oval, stem-leaves oblanceolate ; peduncles elongated, 1-flowered ; corolla salver-form, lobes acute. *Hook. Am.* 1. *p.* 286.

Houstonia cærulea. *Willd. Sp.* 1. *p.* 583. *Pers. Syn.* 1. *p.* 125. *Ait. Kew.* 1. *p.* 235. *Mahl. Catal. p.* 15. *Nutt. Gen.* 1. *p.* 95. *Bart. Phil.* 1. *p.* 84. *Ell. Sk.* 1. *p.* 192. *Bart. Am.* 1. *p.* 119. Icon, *tab.* 34. *f.* 1. *Bigel. Bost. p.* 53. *Torr. Fl.* 1 *p.* 172. *Ejusd. Comp. p.* 81. *Florul. Cestr. p.* 19. *Lindl. Ency. p.* 90. *Beck, Bot. p.* 242. *Eat. Man. p.* 177. var. elatior. *Pursh, Am.* 1. *p.* 106.

H. Linnæi, *var.* elatior. *Mx. Am.* 1. *p.* 84.

Blue Hedyotis. *Vulgò*—Dwarf Pink. Bluets. Innocence.

Root perennial. *Stems* numerous, 3 to 6 inches high, erect, slender, quadrangular, dichotomous, smooth. *Radical leaves* spatulate, obtuse, narrowed to a petiole at base, smooth, minutely ciliate; *stem-leaves* oblanceolate, or elliptic-lanceolate, somewhat ciliate; *stipules* short and broad. *Calyx-segments* oblong, erect, much shorter than the tube of the corolla, persistent. *Corolla* blue, or blue and white, (sometimes nearly all white,) with a yellow throat; tube one fourth of an inch long; lobes obovate, acute. *Stamens* included. *Style* longer than the tube of the corolla; *stigma* bifid. *Capsule* broadly obcordate, projecting above the entire part of the calyx, opening at the top in the direction of its longest diameter, but across the dissepiment. *Seeds* small, orbicular, compressed, rugose, with a cavity on one side.

Hab. Grassy banks, and woodlands: common. *Fl.* April—Sept. *Fr.* June—Octo.

Obs. I was reluctant to merge this plant (so well known by the name of *Houstonia,*) in the present genus; but the high authority of Prof *Hooker*, and my own conviction of its propriety, induced me to yield the point. Regarding them all as belonging to *Hedyotis*, there are 9 or 10 additional species enumerated in the U. States.

73. MITCHELLA. *L. Nutt. Gen.* 138.

[Named in honor of Dr. *John Mitchell*; a Botanist of Virginia.]

Calyx 4-toothed. *Corolla* funnel-form; tube terete; limb 4-parted, spreading, villous on the inner side. *Berry* didymous, 4-seeded.

A Suffruticose creeping evergreen: leaves opposite, petiolate, connected by minute stipules; flowers in pairs on twin ovaries, axillary or terminal. *Nat. Ord.* 190. *Lindl.* Cinchonaceæ.

1. M. repens, *L.* Stem prostrate, branched, smooth; leaves ovate; flowers in pairs on a single peduncle. *Beck, Bot. p.* 160. Icon, *Bart. Am.* 3. *tab.* 95. *f.* 1.

Creeping Mitchella. *Vulgò*—Partridge Berry.

Perennial. *Stem* creeping, 6 to 12 inches long, branching in all directions from the root. *Leaves* ovate, or roundish-ovate,—sometimes a little cordate at base, entire, dark green, generally with a whitish central line, over the midrib; petioles connected by small acuminate stipules. *Flowers* in pairs, on a twin or coalesced ovary, at the end of a peduncle which is about as long as the petioles. *Calyx-segments* small, persistent. *Corolla* white; tube about half an inch long, slender; limb very villous on the inside; lobes lance-ovate, acute. *Stigma* mostly 4-cleft. *Berry* subglobose, crowned with the persistent teeth of the 2 calyces, red when mature.

Hab. Moist woodlands, about the roots of trees: common. *Fl.* June. *Fr.* Octo.

Obs. I have occasionally observed flowers with the limb of the corolla *three-lobed*, and then always *triandrous*:—sometimes *one* on an ovary was so,—and sometimes *both*. The *berries* frequently remain until the flowers of the succeeding year put forth. They are eatable, but insipid. This is the only species of the genus in the U. States.

74. SANGUISORBA. *L. Nutt. Gen.* 161.

[Latin, *Sanguis*, blood, and *sorbeo*, to absorb; being supposed to stop bleeding.]

Calyx colored, corolla-like, 4-parted. *Petals* 0. *Stigma* multifid. *Ovary* 4-angled, bracteate at base. *Carpels* 2, included in the tube of the calyx, becoming dry indehiscent 1-seeded *akenes*.

Herbaceous: leaves odd-pinnate, stipular; flowers aggregated in dense cylindric or ovate spikes. *Nat. Ord.* 72. *Lindl.* SANGUISOREÆ.

1. S. CANADENSIS, *L.* Leaflets ovate-oblong, cordate at base, coarsely serrate; spikes cylindric, long; stamens much exserted, the filaments dilated above. *Beck, Bot. p.* 115.

CANADIAN SANGUISORBA. *Vulgò*—Burnet Saxifrage.

Root perennial. *Stem* 2 to 4 feet high, fistular, terete, striate and roughish pubescent, with a few erect smoothish and somewhat angular branches. *Leaves* alternate, pinnate, with a terminal odd leaflet; *common petiole* dilated at base into a sheathing membrane, supporting auricular serrated *stipules*; *leaflets* two to four inches long and one to two inches wide, glabrous, oblong, or ovate-oblong, obtuse, cordate at base, petiolate, coarsely dentate-serrate, the serratures often acuminate, or cuspidate. *Stipules* at the base of the *partial petioles* ovate, acute, serrate, often wanting. *Spikes* 3 to 6 inches in length, on long peduncles,—or rather terminating the nearly naked branches. *Flowers* numerous, crowded, sessile,—each with 3 *bracts* at base; the lower bract lance-oblong, obtuse, about as long as the ovary, the two lateral ones lance-ovate, about one third the length of the lower one, and all of them tomentose, pulverulent, and fringed on the margin. *Calyx* yellowish or greenish white, resembling a corolla; segments ovate-oblong, keeled, with a slightly compressed callous apex. *Stamens* very long; the upper part of the filament flatted and dilated. *Style* a little longer than the calyx; *stigma* somewhat capitate, multifid, or pencilform. *Ovary* ovoid-quadrangular, the angles prominent, and at length winged.

Hab. Low meadow grounds; margins of swamps: frequent. *Fl.* Aug. *Fr.* Octo.

Obs. Authors generally speak of *two* bracts (or calyx-leaves, as they were formerly termed,) at the base of the flower; but I find them as above described. One other species has been enumerated in the U. States; but it does not seem to be well ascertained.

b. *Corolla tetrapetalous—or* 0.

75. CORNUS. *L. Nutt. Gen.* 143.

[Latin, *Cornu*, a horn; from the horny toughness of the wood.]

Calyx 4-toothed; segments small. *Petals* 4, oblong. *Stamens* longer than the corolla; *anthers* incumbent. *Stigma* capitate or obtuse. *Drupe* with a 2 or 3-celled nut.

Small Trees, or Shrubs—rarely Herbaceous: branches and leaves generally opposite: leaves without stipules, entire, penninerved; flowers subcapitate, with a 4-leaved involucre,—or cymose and paniculate, without an involucre. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

† *Flowers subcapitate—with an Involucre.*

1. C. FLORIDA, *L.* Arborescent; leaves ovate, acuminate; involucre large, with obcordate leaflets; drupe oval, red. *Beck, Bot. p.* 153. Icon. *Mx. f. Sylva*, 1. *tab.* 48.

FLOWERING CORNUS. *Vulgò*—Dog-wood. Common Dog-wood.

Stem 15 to 20 feet (sometimes 30 or 40 feet) high, with numerous expanding branches; the young branches opposite, or frequently in fours. *Leaves* ovate, or elliptic, acuminate, pilose on both sides with short appressed hairs, whitish beneath, and when young conspicuously pubescent along the nerves. *Flowers* in terminal sessile umbels, or clusters. *Involucre* about 3 inches in diameter, 4-leaved; leaflets in opposite pairs, white, or sometimes tinged with purple, nerved, obcordate, or contracted into a callous notch at apex, the lower pair rather shorter and more orbicular. *Calyx* tubular, greyish-pubescent; segments obtuse. *Corolla* greenish yellow; petals lance-oblong. *Style* shorter than the stamens; *stigma* capitate. *Drupe* oval, bright red when mature; *nut* 2-celled.

Hab. Woodlands; every where common. *Fl.* May. *Fr.* Sept.—October.

Obs. The wood of this small tree is very close-grained and firm,—affording excellent cogs for mill-wheels, &c. The young straight stems make good hoops, for the coopers; and, in the "good old times," when it was the fashion for our females to put their hands to the *distaff*, the slender regularly-disposed branches furnished that implement, also, for the spinsters. The *bark* is an excellent tonic, almost rivalling the cinchona, in efficacy. *See Dr. Walker's Inaugural Thesis. Philadelphia*, 1803. A preparation called *cornine*, (analogous to the *quinine* of the shops,) has been obtained from it by Mr. *Geo. W. Carpenter*, of Philadelphia; which may some day become important, if the supply of cinchona should fail.

It is a remark of our observing Farmers, that the proper time to plant *Indian Corn* (Zea mays) is when the involucres of the Dog-wood are first developed.

†† *Flowers cymose, or paniculate—without an Involucre.*

* *Leaves opposite.*

2. C. SERICEA, *L'Herit.* Branches expanded; leaves elliptic-ovate, acuminate, with a somewhat silky-ferruginous pubescence beneath; cymes depressed; peduncles villous; drupe roundish-obovoid, blue. *Beck, Bot. p.* 153.

C. lanuginosa. *Mx. Am.* 1. *p.* 92.

C. sanguinea. *Marsh. Arbust. p.* 36. Not? of *Linn.* &c.

SILKY CORNUS. *Vulgò*—Red rod. Swamp Dog-wood.

Stem slender, virgate, 6 to 10 feet high, when young yellowish green, or often purple; branches spreading, the young shoots and petioles lanuginous. *Leaves* 2 to 5 inches long and 1 to 3 inches wide, on petioles half an inch to an inch in length, elliptic-ovate, acuminate, nearly smooth above, silky-pubescent and lighter colored beneath, the nerves and veins becoming a reddish brown. *Cymes* terminating the young branches, pedunculate, the common peduncle one and a half to 2 inches long, with 3 to 5 principal divisions, all woolly-pubescent; flowers crowded. *Calyx* small, pilose; segments acute. *Corolla* yellowish white; petals sublinear, rather obtuse, broader at base. *Drupe* subglobose, or roundish-obovoid, bright palish blue when mature; *nut* 2-celled.

Hab. Margins of swamps, and streams: frequent. *Fl.* June. *Fr.* Octo.

Obs. Prof. *Hooker* seems to think that neither *this*, nor our C. *paniculata*, is sufficiently distinct from C. *alba*: But, whatever may be the fact with respect to C. paniculata, I am satisfied our C. *sericea* is altogether a different plant. We have, however, a Cornus closely allied to this species—with upright dark purple branches, and leaves with the under surface nerves and petioles smooth,—which I am inclined to suspect may be the C. *sanguinea*, of the American Botanists; but I doubt its being more than a *variety* of the present one. The bark of the C. *sericea* has also been ascertained to possess valuable tonic properties. *See Dr. Walker's Thesis, as above.*

3. C. PANICULATA, *L'Herit.* Branches erect; leaves elliptic, or lance-ovate, acuminate, hoary beneath; cymes thyrsoid-paniculate; drupe subglobose, white. *Beck, Bot. p.* 154.
C. candidissima. *Marsh. Arbust. p.* 35.

PANICLED CORNUS. *Vulgò*—White Dog-wood.

Stem 4 to 6 or 8 feet high, with numerous upright slender branches. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, on petioles one fourth to half an inch long, varying from elliptic to lance-ovate and lanceolate, acuminate, palo green above, glaucous or hoary white beneath, sprinkled with short white hairs on both sides; nerves somewhat ferruginous, and, with the petioles, smooth. *Flowers* in open thyrsoid panicles, becoming still more elongated when in fruit. *Calyx*, (or ovary,) clothed with a short white silky appressed pubescence; segments very small, acute. *Corolla* white; petals lance-oblong, rather acute. *Stigma* capitate, somewhat emarginate. *Drupe* depressed-globose, white, with a leaden tinge when mature.

Hab. Thickets, and fence-rows: somewhat rare. *Fl.* June. *Fr.* October.

Obs. This species is not very common; but has been found in several places within the County, since my Catalogue was published. I am much inclined to the opinion of Prof. *Hooker*, that this will prove to be only a *variety* of C. *alba*,—as I have found specimens extremely like it, with the inflorescence *cymose*. The C. *stricta*, *Lam.* may, also, be nothing more than a variety.

* * *Leaves alternate.*

4. C. ALTERNIFOLIA, *L.* Branches and leaves somewhat alternate; leaves ovate, or oval, acute or acuminate, hoary beneath; cymes depressed, spreading; drupe globose, bluish black. *Beck, Bot. p.* 154.
C. alterna. *Marsh. Arbust. p.* 35. *Florul. Cestr. p.* 20.

ALTERNATE-LEAVED CORNUS.

Stem 10 to 15 feet high, with spreading irregularly alternate branches, which are covered with a yellowish green bark, streaked with numerous oblong white warts. *Leaves* somewhat alternate, often nearly opposite, about 3 inches long, and one and a half to 2 inches wide, on petioles about an inch in length, ovate, or elliptic, more or less acuminate, smooth above, hoary and somewhat pilose beneath, margin and petioles slightly ciliate-pubescent; nerves rather ferruginous. *Flowers* in depressed spreading cymes. *Calyx* somewhat pubescent; segments nearly obsolete. *Corolla* yellowish white; petals lance-oblong. *Stigma* subcapitate, obtuse. *Drupe* globose, dark blue, or bluish black, when mature; *nut* 2 or 3-celled.

Hab. Moist thickets; fence-rows, &c. frequent. *Fl.* May—June. *Fr.* Aug.

Obs. Four or five additional species are enumerated in the U. States,—of which, however, one or two are not well established. The C. *canadensis*,—an interesting little herbaceous species, with an involucre,—occurs in abundance on the Pekono Mountain, in this State; but seems to be very much confined to such regions.

76. ISNARDIA. *L. Nutt. Gen.* 142. & 141.

[Dedicated to *Antoine d' Isnard*; a French Botanist.]

Calyx 4-parted, persistent. *Corolla* 4-petalled, or 0. *Capsule* quadrangular-obovoid, or oblong and 4-angled, 4-celled, many-seeded.

Herbaceous, aquatic or marshy plants: leaves entire, alternate, or opposite; flowers axillary, mostly sessile. *Nat. Ord.* 47. *Lindl.* ONAGRARIÆ.

† *Leaves alternate; petals* 4.

1. L. ALTERNIFOLIA, *DC.* Stem erect, branched, nearly smooth; leaves lanceolate, subsessile; flowers solitary, on short peduncles; capsule roundish-obovoid, 4-cornered, angles winged. *Beck, Bot. p.* 119.

Ludwigia alternifolia. *Willd. Sp.* 1. *p.* 672. *Ait. Kew.* 1. *p.* 265. *Muhl. Catal. p.* 17. *Ell. Sk.* 1. *p.* 217. *Bigel. Bost. p.* 60. *Lindl. Ency. p.* 104. *Eat. Man. p.* 211.

L. macrocarpa. *Mx. Am.* 1. *p.* 89. *Pers. Syn.* 1. *p.* 146. *Pursh, Am.* 1. *p.* 110. *Nutt. Gen.* 1. *p.* 98. *Bart. Phil.* 1. *p.* 75. *Torr. Fl.* 1. *p.* 180. *Ejusd. Comp. p.* 83. *Florul. Cestr. p.* 20. Icon, *Bart. Am.* 1. *tab.* 14.

ALTERNATE-LEAVED ISNARDIA. *Vulgò*—Bastard Loose-strife.

Root perennial. *Stem* 2 to 3 feet high, much branched, often purplish, somewhat angular by the decurrence of the petioles, slightly pubescent, suffruticose when old. *Leaves* alternate, 2 to 3 inches long, and half an inch to an inch wide, acute, narrowed at base into a very short petiole, sprinkled with short hairs, and minutely ciliate on the margin. Segments of the *Calyx* longer than the ovary, ovate, acuminate, ciliate, becoming purple. *Corolla* yellow; petals roundish-obovate, nearly as long as the calyx-segments, caducous. *Style* deciduous; *stigma* large, capitate. *Capsule* large, 4-cornered, with 2 lance-linear bracts at base; apex somewhat hemispherical, opening with a central foramen; angles conspicuously winged, wings ciliate. *Peduncle* about one fourth of an inch long.

Hab. Swampy meadows, and margins of rivulets: frequent. *Fl.* July. *Fr.* Sept.

† † *Leaves opposite; petals* 0.

2. I. PALUSTRIS, *L.* Stem procumbent, creeping, glabrous; leaves ovate, petiolate; flowers sessile; capsule ovoid-oblong, somewhat four-cornered. *Beck, Bot. p.* 120.

Ludwigia nitida. *Mx. Am.* 1. *p.* 87. *Pursh, Am.* 1. *p.* 111.

L. palustris. *Ell. Sk.* 1. *p.* 211. *Florul. Cestr. p.* 20.

MARSH ISNARDIA.

Root perennial? fibrous. *Stem* 6 to 18 inches long, succulent, purple, prostrate, (sometimes floating,) sending out long roots at the joints, and branching from the axils. *Leaves* ovate, or somewhat spatulate, acute, smooth and shining, the largest ones about an inch long and three fourths of an inch wide, narrowed abruptly at base into a tapering flat or winged petiole, half an inch to three-quarters in length. *Flowers* small, sessile and opposite in the axils of the leaves. Segments of the *Calyx* shorter than the ovary, ovate, acute. *Corolla* 0. *Capsule* oblong, truncate, obtusely 4-cornered, crowned with the persistent calyx. *Seeds* very numerous, small, white.

Hab. Ditches, and miry places: frequent. *Fl.* July. *Fr.* September.

Obs. There are about a dozen additional species, as the genus is now constituted, in the U. States,—chiefly in the South.

B. OVARY SUPERIOR. a. *Flowers complete.*

77. PLANTAGO. *L. Nutt. Gen.* 145.

[A name of obscure and uncertain derivation.]

Calyx 4-parted (rarely 3-parted). *Corolla* monopetalous, marcescent; limb 4-cleft, reflexed. *Stamens* long. Capsule ovoid, 2-celled, circumscissed, or opening horizontally.

Herbaceous: stemless; leaves all radical; flowers in spikes, on axillary or interfoliaceous scapes, bracteate. *Nat. Ord.* 182. *Lindl.* PLANTAGINEÆ.

1. P. MAJOR, *L.* Leaves ovate, or oval, subdentate, smoothish, on longish petioles; spike cylindric, or a little tapering, very long; flowers imbricated; capsule many-seeded. *Beck, Bot. p.* 293.

GREATER PLANTAGO. *Vulgò*—Common, or great Plantain. Way bread. *Gall.*–Plantain ordinaire. *Germ.*–Der grosse Wegerich. *Hisp.*–Llanten.

Root perennial. *Leaves* spreading on the ground, 3 to 6 or 8 inches long, and 2 to 4 or 5 inches wide, more or less ovate, or oval, 5 to 7-nerved, with coarse obscure teeth, generally smoothish, (sometimes quite pilose,) narrowed abruptly at base to a petiole about as long as the leaf; petiole nerved, channelled above. *Scapes* several, 6 to 18 inches high, inclusive of the *spikes*, which vary from 2 to 12 or 15 inches in length. *Bracts* lanceolate, mostly acute, one to each flower, shorter than the calyx. *Calyx* persistent; segments lance-ovate, keeled. *Corolla* whitish, inconspicuous, ventricose below, contracted into a neck above, shrivelling, and remaining on the ovary. *Stamens* about twice as long as the corolla. *Style* exserted, persistent. *Capsule* lance-ovoid, somewhat compressed, obtuse at apex.

Hab. Moist rich grounds: foot-paths, &c. common. *Fl.* June—Sept. *Fr.* Aug.—Oct.

Obs. A naturalized foreigner;—remarkable for accompanying civilized man,—growing along his foot-paths, and flourishing around his settlements. It is said our Aborigines call it "*the white man's foot*," from this circumstance. The leaves have long been known and used as a popular dressing for blisters and other sores a practice sportively noticed by *Shakspeare*:—

"*Rom.* Your *Plantain leaf* is excellent for that.
Ben. For what, I pray thee?
Rom. For your broken shin."

ROMEO AND JULIET, *Act* 1. *Sc.* 2.

2. P. VIRGINICA, *L.* Hoary-pubescent; leaves obovate-lanceolate, subdenticulate; flowers rather distant on the cylindric spike; capsule 2-seeded. *Beck, Bot. p.* 293.

VIRGINIAN PLANTAGO. *Vulgò*—White Plaintain.

Whole plant covered with a grey pubescence. *Root* biennial, *Torr.* (annual, *Willd. Muhl.* &c.). *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, oval, or obovate-lanceolate, 3 to 5-nerved, narrowed gradually at base to a petiole 1 to 2 inches long. *Scapes* longer than the leaves (4 to 6 or 8 inches) very hairy. *Spike* at first short, finally elongated to 2, 3, or 4 inches. *Flowers* a little distant, not imbricated. *Calyx* about as long as the bract, often a little longer; segments broad-ovate, or obovate, with green keel and white margin. *Corolla* yellowish; segments larger than in the preceding. *Stamens* longer than the corolla; *anthers* large. *Capsule* ovoid. *Seed* single in each cell.

Hab. Sterile old fields, and stony hills: frequent. *Fl.* May—June. *Fr.* Aug.

3. P. LANCEOLATA, *L.* Leaves lanceolate, acute at each end; spike short, dense, ovoid-cylindric; scapes long, slender, grooved; capsule 2-seeded. *Beck, Bot. p.* 293.

LANCEOLATE PLANTAGO. *Vulgò*—English Plantain. Ripple grass.

Root perennial. *Leaves* 4 to 8 inches long and 1 to 2 inches broad, lanceolate, acute, remotely denticulate, about 5-nerved, somewhat pilose, narrowed gradually at base to a petiole. *Scapes* 1 to 2 feet high, angular, grooved, pilose with somewhat appressed hairs. *Spike* about an inch long, at first ovoid-oblong, finally near-

ly cylindric, dense-flowered. *Bracts* ovate, acuminate, with a green keel and membranaceous margin and apex, the slender point at length reflexed. *Calyx* deeply 3-parted, (or rather 3-leaved,) membranaceous; the outer or lower segment oval, truncate, emarginate, with 2 green keel-like lines; the lateral segments rather longer, boat-shaped, acute, keel green, fringed with conspicuous hairs near the apex. *Corolla* dirty white, with a brown keel; segments ovate, very acute. *Stamens* very long; *anthers* greenish white. *Capsule* 2-seeded. *Seeds* oblong, convex on one side, concave on the other, shining, amber-colored.

Hab. Fields, and meadow grounds: common. *Fl.* May—Aug. *Fr.* July—Sept.

Obs. This species differs remarkably from the two preceding, in the structure of the *calyx*. It is an introduced plant,—becoming very prevalent; and is generally much disliked on account of its *seeds* mingling with those of the *red clover*, and affecting the value of the latter, in the market. All kinds of Stock eat it freely; and it has even been cultivated, by some farmers, as a sheep pasture: But I think it far from being a desirable plant on a farm. Nine or ten additional species are enumerated in the U. States.

78. BARTONIA. *Muhl.* Not of *Nutt. Pursh, Bart.* nor *Lindl.*
[In honor of the late worthy Prof. *B. S. Barton*, of Pennsylvania.]

Calyx deeply 4-parted, appressed. *Corolla* subcampanulate, 4-parted; lobes somewhat erect. *Stigma* thick, somewhat bifid, and decurrent on the short style. *Capsule* 1-celled, 2-valved, surrounded by the persistent calyx and corolla. *Seeds* minute, numerous.

Herbaceous: stem simple, subpaniculate above; leaves minute, sessile, mostly opposite. *Nat. Ord.* 197. *Lindl.* GENTIANEÆ.

1. B. PANICULATA, *Muhl.* Stem slender, paniculate above; leaves subulate; peduncles opposite; style shorter than the ovary. *Eat. Man. p.* 51.
B. tenella. *Pers. Syn.* 1. *p.* 141. *Torr. Fl.* 1. *p.* 185. *Ej. Comp. p.* 58.
Sagina virginica. *Willd. Sp.* 1. *p.* 719. Also, *Muhl. Catal. p.* 18.
Centaurella paniculata. *Mx. Am.* 1. *p.* 98. ICON, *tab.* 12. *f.* 1. *Nutt. Gen.* 1. *p.* 101. *Ell. Sk.* 1. *p.* 204. *Bigel. Bost. p.* 52. *Beck, Bot. p.* 243.
C. autumnalis. *Pursh, Am.* 1. *p.* 100.
Also, Centaurium autumnale. *Pers. Syn.* 1. *p.* 137.
Andrewsia paniculata. *Bart. Phil.* 1. *p.* 89. *Bart. Am.* 2. *p.* 51. ICON, *tab.* 53. *f.* 2. *Florul. Cestr. p.* 21.
PANICULATE BARTONIA.

Plant yellowish green. *Root* annual. *Stem* 3 or 4 to 12 or 15 inches high, slender, angular by the decurrence of the leaves, often twisted, smooth. *Leaves* very short (scarcely the eighth of an inch long), subulate, mostly opposite, appressed to the stem. *Flowers* mostly on opposite peduncles, often terminating the branches in threes; peduncles about the fourth of an inch in length, bracteate at base. *Calyx-segments* lance-linear, acute, shorter than the corolla. *Corolla* pale greenish yellow; lobes oblong, obtuse (acute, *Ell. Torr.*), slightly keeled. *Stamens* inserted on the corolla at the clefts, about half as long as the lobes. *Style* very short, covered by the decurrent lobes of the stigma. *Capsule* oblong, compressed. *Seeds* very numerous and minute, reddish.

Hab. Sterile grounds; in thickets, and clearings: frequent. *Fl.* Aug. *Fr.* Oct.

Obs. I concur with Professors *Torrey* and *Eaton*, on the propriety of restoring to this plant the name which *Muhlenberg* gave to it. There is one other species in the Southern States.

79. OBOLARIA. *L. Nutt. Gen.* 152.

[Greek, *Obolos*, a small Athenian coin; which the leaves are said to resemble.]

Calyx of 2 cuneate-oblong scpals, or rather *bracts*. *Corolla* tubular, campanulate, 4-cleft; lobes entire, or crenulate. *Stamens* inserted on the corolla at the clefts. *Stigma* subcapitate, bifid. *Capsule* ovoid, 1-celled, 2-valved, many-seeded. *Seeds* very minute.

Herbaceous: leaves opposite; flowers axillary and terminal, sessile, with foliaceous sepals, or bracts. *Nat. Ord.* 197. *Lindl.* GENTIANEÆ.

1. O. VIRGINICA, *L.* Leaves cuneate-obovate, or subrhomboid, often truncate, scssile; flowers opposite, or terminal by threes. *Beck, Bot. p.* 244. Icon, *Bart. Am.* 3. *tab.* 90. Also, *Florul. Cestr. tab.* 2.

VIRGINIAN OBOLARIA. *Vulgò*—Penny-wort.

Root perennial? *Stem* 3 to 6 or 8 inches high, often several from the same root, nearly simple, or with a few opposite axillary branches above, smooth and fleshy. *Leaves* rather fleshy, of a purplish green, somewhat crowded above; those below in distant pairs and very small; all slightly decurrent, forming angles on the stem. *Sepals*, or bracts, resembling the leaves in color and texture. *Corolla* pale purple, sometimes nearly white, persistent and shrivelling. *Stamens* much shorter than the corolla. *Style* about one third the length of the ovary; lobes of the *stigma* spreading. *Capsule* obtuse. *Seeds* pale straw color, shining.

Hab. Rich woodlands, among dead leaves: frequent. *Fl.* April—May. *Fr.* June.

Obs. The only species of the genus; and although placed by *Linnæus* in *Didynamia*, is clearly Tetrandrous.

b. *Flowers incomplete.*

80. SYMPLOCARPUS. *Salisb. Nutt. Gen.* 157.

[Greek, *Symploke*, connection, and *Karpos*, fruit; descriptive of the plant.]

Spathe ventricose-ovoid, acuminate. *Spadix* oval. *Perianth* deeply 4-parted, persistent; segments cuneate, truncate, becoming thick and spungy. *Style* 4-sided, tapering; *stigma* simple, minute. *Seeds* solitary, immersed in the spungy receptacle.

Herbaceous and subaquatic: stemless; leaves enlarging, preceded by sheathing radical stipules; flowers on a spadix, monoclinous, with a calyx-like perianth. *Nat. Ord.* 256. *Lindl.* AROIDEÆ.

1. S. FŒTIDA, *Nutt.* Leaves cordate-oval; spadix on a short scape, preceding the leaves. *Beck, Bot. p.* 382.
Dracontium fœtidum. *Willd. Sp.* 2. *p.* 288.
Pothos fœtida. *Mx. Am.* 2, *p.* 186. *Ait. Kew.* 1. *p.* 270. *Muhl. Catal. p.* 17. *Pursh, Am.* 2. *p.* 398. *Lindl. Ency. p.* 88.
Ictodes fœtidus. *Bigel. Bost. p.* 59. *Eat. Man. p.* 186.

FETID SYMPLOCARPUS. *Vulgò*—Swamp Cabbage. Skunk weed.

Root perennial, thick, truncate, with verticils of fleshy fibres. *Leaves* appearing after the spadix has flowered, at first orbicular-cordate, at length cordate-oval, becoming very large (often nearly 2 feet long and a foot or more wide), entire, smooth; *stipules* expanding, ovate-oblong, acuminate, or often spatulate at apex. *Spathe* on a short scape, ovoid, cucullate, acuminate, spotted with purplish brown, green, and yellow, the apex oblique or incurved. *Spadix* oval, about an inch in diameter, on a short thick peduncle. *Flowers* compact, appearing tessellated.

Segments of the *perianth* dark brown, fleshy, cuneate, truncate, the apex and margins inflected. *Stamens* a little exserted. *Style* tapering to a point. *Seed* as large as a pea, imbedded in the receptacle.

Hab. Low swampy grounds: common. *Fl.* February—March. *Fr.* Sept.

Obs. This plant is notorious for the pole-cat-like odor which it emits, when wounded; and is said to possess some medicinal virtues, as an anti-spasmodic. The root, when chewed, produces a tingling, or pricking sensation, in the mouth. It is the only species of the genus in the U. States: Dr. *Barton*, however, describes a pretty distinct *variety*, near Philadelphia.

81. PARIETARIA. *L.* *Nutt. Gen.* 742.

[Latin, *Paries*, a wall; one of the species delighting to grow on old walls.]

Monoicously Polygamous: *Flowers* in clusters, surrounded by a many-cleft involucre. Perfect Fl. *Perianth* 4-parted, persistent. *Stamens* at first incurved, then expanding with an elastic force. *Stigma* pencil-form. *Fruit* a polished *nut*, enclosed in the perianth. Pistillate Fl. in the same cluster, resembling the perfect ones.

Herbaceous: roughish pubescent; leaves mostly alternate; flowers in axillary involucrate clusters. *Nat. Ord.* 78. *Lindl.* Urticeæ.

1. P. pennsylvanica, *Muhl.* Leaves oblong-lanceolate, narrowed towards the apex, rather obtuse, covered with rough dots; involucre longer than the flowers. *Beck, Bot. p.* 315.
P. americana. *Muhl. Catal. p.* 95.

Pennsylvanian Parietaria. *Vulgò*—Pellitory.

Root annual. *Stem* 4 to 12 or 15 inches high, mostly simple, sometimes with opposite branches near the base, striate, roughish pubescent. *Leaves* 1 to 2 inches long, and about half an inch wide, alternate, lanceolate, subacuminate or with a lengthened narrow point, but rather obtuse at the apex, irregularly nerved, entire, ciliate on the margin, somewhat pilose on both surfaces, and rough with elevated dots, tapering at base to a slender ciliate petiole one half to three fourths of an inch in length. *Clusters of flowers* somewhat branching or subdivided, so as to present the appearance of a 2 or 3-leaved involucre to each flower. *Leaflets* or segments of the *involucre* sublinear, hispid-ciliate, rough with elevated dots. *Perianth* colored, whitish, becoming light reddish brown; segments lance-ovate, acute, keeled, pilose. *Seed* or nut oval, somewhat compressed, greenish brown, very smooth and shining.

Hab. Along the Schuylkill; Black Rock: not common. *Fl.* May. *Fr.* July.

Obs. Found by D. Townsend, Esq. in 1830. One other species occurs in the U. States, in the South.

[Euonymus atropurpureus. *Pentandria Monogynia.*]

[Smilacina canadensis. *Hexandria Monogynia.*]

Order 2. Digynia.

82. HAMAMELIS. *L.* *Nutt. Gen.* 160.

[A name of obscure derivation.]

Involucre 3-leaved, 3-flowered. *Calyx* double; outer one of 3 small suborbicular sepals, the inner one deeply 4-parted; segments oblong. *Petals* 4, linear, very long. *Capsule* bony, 2-celled, 2-horned, opening at the top. *Seeds* 1 in each cell.

Shrubs: leaves alternate, penninerved, stipular; flowers in subsessile axillary clusters, with a 3-leaved involucre. *Nat. Ord.* 42 *Lindl.* HAMAMELIDEÆ.

1. H. VIRGINICA, *L.* Leaves obovate and oval, sinuate-dentate, acute or obtuse, unequal and obliquely subcordate at base. *Beck, Bot. p.* 152. ICON, *Bart. Am.* 3. *tab.* 78.

VIRGINIAN HAMAMELIS. *Vulgò*—Witch Hazel.

Stem 8 to 12 feet high, mostly several from the same root; branches numerous, long, flexuose or somewhat geniculate. *Leaves* 4 to 6 inches long and 3 to 5 inches wide, mostly obovate and rather acute, obtusely sinuate-dentate, slightly scabrous on both sides and ciliate on the margin, pubescence branched or stellate; petioles about half an inch long. *Flowers* clustered in threes on a short common peduncle. Leaves of the *involucre* small, ovate. *Calyx* pubescent. *Petals* greenish yellow, narrow, linear, a little crisped, about three-fourths of an inch in length. *Stamens* very short; and at the base of each petal a short flat truncate nectary, or filament, dilated at apex, and nearly as long as the stamens. *Ovary* hirsute; *styles* very short. *Capsule* ovoid, half superior, bisulcate at apex, opening elastically and transversely, or across the dissepiment; cells polished internally. *Seeds* coated, black and shining.

Hab. Borders of moist woodlands, and thickets: frequent. *Fl.* Octo. *Fr.* Sept.

Obs. I find this generally *polygamous*;—or the stamens (and likewise the petals) wanting, in several of the little clusters of flowers. The flowers of this singular shrub appear after it has shed its leaves, in autumn; and the fruit is not perfected until the following year. Possibly this anomaly may have given rise to some of the absurd notions, respecting its magical properties, which enable *water-smellers*, and other impostors, to practice upon credulous ignorance. This is probably the only species in the U. States; as I suspect the H. *macrophylla*, of *Pursh*, is not distinct from our plant. There is, however, another *variety* (var. *parvifolia*, *Nutt.*), which has been found as near to us as York County, in this State, by Mr. GEO. W. HALL.

[Gentiana crinita. Cuscuta europæa. *Pentandria Digynia.*]

Order 4. Tetragynia.

83. ILEX. *L. Nutt. Gen.* 163.
[A name of obscure and uncertain etymology.]

DIOICOUSLY POLYGAMOUS: *Calyx* 4 or 5-toothed, persistent. *Corolla* 4 or 5-petalled, slightly cohering at base, subrotate. *Stamens* 4 or 5, alternating with the petals. *Stigmas* 4 or 5, subsessile, distinct, or united. *Berry* 4 or 5-seeded.

Small Trees, or Shrubs: leaves mostly alternate, coriaceous, evergreen and spinose-toothed; flowers pedunculate, axillary, or scattered on the young branches, often dioicous by abortion. *Nat. Ord.* 166. *Lindl.* ILICINEÆ.

1. I. OPACA, *Ait.* Leaves oval, acute, flat, sharply spinose-dentate, coriaceous, glabrous; flowers scattered at the base of the young branches. *Beck, Bot. p.* 230. ICON, *Mx. f. Sylva,* 2. *tab.* 84.
I. aquifolium. *Marsh. Arbust. p.* 63. Not of *Linn.*

OPAQUE ILEX. *Vulgò*—Holly. American Holly.

Stem 10 to 20 feet high; branches spreading. *Leaves* 2 or 2 and a half inches long, and about an inch wide, evergreen and coriaceous, mostly oval, sinuate-den-

tate, the teeth and apex terminating in sharp spines; petioles one fourth of an inch long. *Flowers* in small loose fascicles, or solitary, pedunculate, scattered along the lower part of the young branches; *pedicels* with minute bracts at base. *Calyx-segments* acute, ciliate. *Corolla* yellowish white; *petals* ovate-oblong, obtuse, slightly cohering at base, (sometimes 5 or 6). *Stamens* shorter than the corolla, (sometimes 5 or 6). *Berries* roundish-ovoid, smooth, red when mature, persistent.

Hab. Woodlands: Mica-slate hills: Brandywine: rare. *Fl.* June. *Fr.* Sept.

Obs. This handsome evergreen is very rare, and of small growth, with us. I have only met with one or two specimens. Seven or eight additional species are found in the U. States,—chiefly in the South.

84. POTAMOGETON. *L. Nutt. Gen.* 166.

[Greek, *Potamos*, a River, and *Geiton*, a Neighbor; from its place of growth.]

Flowers on a *spadix* arising from a *spathe*. *Calyx* of 4 sepals. *Corolla* 0. *Anthers* subsessile. *Ovaries* 4, becoming 4 compressed and somewhat cochleate *nuts*.

Herbaceous aquatics: floating or submersed; leaves alternate or opposite, with parallel nerves; flowers on axillary or terminal spadices, arising from membranous spathes. *Nat. Ord.* 258. *Lindl.* FLUVIALES.

† *Upper leaves floating.*

1. P. NATANS, *L.*? Lower leaves submersed, linear, membranaceous, often imperfect; upper ones floating, elliptic, coriaceous, on long petioles. *Beck*? *Bot. p.* 385.
P. fluitans? *of Authors.*

SWIMMING POTAMOGETON. *Vulgò*—Floating Pond weed.

Root perennial. *Stem* 9 to 18 inches long (varying with the depth of water). *Floating leaves* 2 to 3 inches long, and an inch to an inch and half broad, often opposite, or nearly so, oblong-oval, generally acute at each end (often cordate at base, *Torr.*), many-nerved, on petioles 3 to 6 inches or more in length; *submersed leaves* 2 to 6 inches long, narrow, sometimes wanting, or nothing more than a petiole. *Spadix* emerged, about an inch long, on an axillary peduncle 2 to 3 inches long, sheathed at base by a membranous bract-like spathe. *Sepals* suborbicular, concave, dull green. *Nuts* with a short oblique beak.

Hab. Pools, and slow-flowing streams: frequent. *Fl.* July. *Fr.* Sept.

Obs. This has always passed for P. *natans*, here; but it agrees better with the description of P. *fluitans*, of the books. The latter, however, may be only a *variety* of P. *natans*,—as has been suggested by several distinguished Botanists.

† † *Leaves all submersed.*

2. P. PERFOLIATUM, *L.* Leaves sessile, amplexicaul, oblong-ovate, somewhat cordate at base; spadix short. *Beck, Bot. p.* 386.
P. crispum. *Florul. Cestr. p.* 23. Not of *Linn. and others.*

PERFOLIATE POTAMOGETON.

Whole plant under water. *Root* perennial. *Stems* numerous from the root, 1 to 3 feet long, branching somewhat dichotomously. *Leaves* about an inch long and half an inch wide, closely embracing the stem, alternate, oblong-ovate, obtuse, or sometimes rather acute, entire, slightly waving on the margin, 3-nerved, or ob-

scurely 5-nerved, subpellucid. *Spadices* oblong, about one third of an inch in length, few-flowered, on lateral peduncles about an inch long. *Sepals* reddish brown.

Hab. Flowing streams: Brandywine: frequent. *Fl.* Aug. *Fr.* October.

Obs. This is the species which my lamented friend, the late Mr. *Schweinitz*, hastily pronounced to be P. *crispum*, when I was preparing my Catalogue; but he was undoubtedly mistaken. The plant is generally to be found in the rapid waters of the Brandywine, lying nearly prostrate on the bottom.

3. P. LUCENS, *L.?* Leaves lanceolate, acute, tapering to a petiole at base; spadix long, cylindric. *Beck*, *Bot. p.* 386.

SHINING POTAMOGETON.

Root perennial. *Stem* 2 to 4 feet long, slender, somewhat branched. *Leaves* alternate, membranaceous, shining, pellucid; lower ones linear-lanceolate, often imperfect; those near the extremity of the stem about 4 inches long, and half an inch to three quarters wide, oblong-lanceolate, tapering to an acute point, entire, many-nerved, with numerous transverse veins, narrowed at base to a petiole about an inch long. *Spadix* 1 to 2 inches long; flowers somewhat distant; *sepals* greenish brown. *Peduncle* of the spadix stout, long (2 or 3 to 6 inches), generally opposite to one of the subterminal leaves.

Hab. Flowing streams: Brandywine: frequent. *Fl.* Aug. *Fr.* October.

Obs. I have been much embarrassed with this species. It is the P. *lucens*, of *Muhlenberg's* Herbarium; but quite different from the European plant, so named, in the Herbarium of the *Philadelphia Academy*. Mr. *Schweinitz* remarked, on my specimens, "this is the species generally called P. *lucens*; but it is more exactly the one called P. *acuminatum*, by the German Botanists." Dr. PICKERING expressed the opinion, that it is only a *variety* of P. *fluitans*; and it does seem to be nearly allied to it. It is, however, always submersed, with us; and generally accompanies the preceding, in swiftly flowing waters.

4. P. PAUCIFLORUM, *Pursh.* Stem slender, somewhat compressed, branched; leaves sessile, linear, narrow, the lower ones alternate, uppermost subverticillate; spadix capitate, few-flowered. *Beck*, *Bot. p.* 386. P. gramineum. *Mx. Am.* 1. *p.* 102. *Muhl. Catal. p.* 18. *Eat. Man. p* 279. Not? of *Willd. Pers. Ait.* nor *Lindl.*

FEW-FLOWERED POTAMOGETON.

Root perennial. *Stem* 6 to 12 inches long, very slender, almost filiform, compressed (terete, *Torr.*), much branched, diffuse and suspended in the water. *Leaves* 2 to 3 inches long, grass-like, linear and narrow, acute, somewhat keeled; lower ones alternate, uppermost ones nearly opposite, or frequently subverticillate by fours. *Spadix* small, capitate, about 4-flowered, on a sub-clavate peduncle about half an inch long in the axil of the verticil, or upper leaves. *Sepals* greenish brown.

Hab. Stagnant pools: Brandywine: Downingtown: frequent. *Fl.* May. *Fr.* July.

Obs. First collected in this County by Mr. JOSHUA HOOPES, in 1828. I presume this is *Pursh's* plant; but the species of this genus seem to be in much confusion and obscurity,—and the difficulty is enhanced not a little by the multitude of synonyms in the books. Six or seven additional species are enumerated in the U. States.

CLASS V. PENTANDRIA.

Order 1. Monogynia.

A. Flowers complete. § 1. *Ovary superior.*

a. *Corolla monopetalous.*

¶. *Seeds* 4, *apparently naked.** *Nat. Ord.* 222. *Lindl.* Boragineæ.

† *Seeds, or Nuts, fixed to the bottom of the Calyx.*

85. PULMONARIA. *L. Nutt. Gen.* 173.

[Latin, *Pulmones*, the Lungs; from its supposed virtue in pulmonary diseases.]

Calyx somewhat prismatic, 5-angled, 5-cleft. *Corolla* funnel-form; limb slightly 5-lobed; throat open. *Nuts* roundish, imperforate at base.

1. P. virginica, *L.* Glabrous; stem nearly erect; radical leaves obovate-oblong, obtuse, stem leaves lance-oblong; calyx much shorter than the tube of the corolla. *Beck, Bot. p.* 255.
Sub-genus, Mertensia virginica. *Pers. Syn.* 1. *p.* 161.

Virginian Pulmonaria. *Vulgò*—Virginian Cowslip. Lungwort.

Root perennial. *Stem* 1 to 2 feet high, succulent, angular, a little branched at summit. Lower *leaves* 3 to 6 inches long and 2 to 4 inches wide, oval or obovate, enlarging, the lowest often becoming nearly orbicular, on longish petioles; stem-leaves gradually smaller above, and on short petioles, or subsessile. *Flowers* subterminal, in corymbose or fasciculate racemes. *Calyx* short; segments lance-ovate, rather obtuse (acute, *Torr.*). *Corolla* purplish blue, large; limb obscurely 5-lobed; tube about half an inch long, tapering downwards, with an annular tuft of hairs on the inside, near the base. *Stamens* rather shorter than the corolla. *Style* a little shorter than the stamens, somewhat persistent; *stigma* simple.

Hab. Rich sandy low grounds; along Brandywine: frequent. *Fl.* April. *Fr.* June

Obs. Dr. *Torrey* describes the *style* as "exserted." It persists for some time after the corolla has fallen,—and is then exserted from the *calyx*; but I have not observed it as long as the corolla. This is rather a handsome plant, and frequently introduced into our flower gardens. Two or three additional species have been enumerated in the U. States.

86. LITHOSPERMUM. *L. Nutt. Gen.* 170.

[Greek, *Lithos*, a stone, and *Sperma*, seed; from the stony hardness of its seeds.]

Calyx 5-parted; segments acute. *Corolla* small, funnel-form; limb 5-lobed; throat open, or naked. *Stamens* included. *Nuts* imperforate at base, bony, rugose, or smooth.

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* This subdivision comprises a kindred groupe, belonging to the *Natural Order* Boragineæ. The plants are generally herbaceous, with round stems and alternate leaves, without stipules, scabrous with hairs proceeding from indurated enlarged bases (rarely smooth); flowers mostly somewhat racemose, often secund, and bracteate, sometimes solitary and axillary; stamens inserted on the corolla; ovary deeply 4-parted, resembling four naked seeds; nuts 4, distinct.

1. L. ARVENSE, *L.* Hispidly pilose; leaves lance-linear, rather acute, nerveless; nuts rugose. *Beck, Bot. p.* 251.

FIELD LITHOSPERMUM. *Vulgò*—Stone weed.

Gallicè—Grémil des champs. *Germanicè*—Der Steinsame.

Whole plant hispid with short rather appressed hairs. *Root* annual. *Stem* 12 to 18 inches high, generally much branched from the root, and often branched near the summit. Leaves 1 to 2 inches long, and a quarter to a third of an inch wide, sessile, lance-linear, acute, narrowed a little at base, with a midrib but no lateral nerves; the lower leaves often oblanceolate and obtuse. *Flowers* solitary, axillary, subsessile. *Calyx-segments* linear, acute, hispid-ciliate, at length elongated. *Corolla* yellowish or milk-white, rather small. *Nuts* ovoid, acuminate, beak a little oblique, surface rugose and cellular, brown when mature.

Hab. Pastures, and grain fields: frequent. *Fl.* May. *Fr.* June.

Obs. An introduced, worthless plant. Five or six additional species are enumerated in the U. States.

87. BATSCHIA. *Gmelin. Nutt. Gen.* 171. Not of *Thunb. & Willd.*
[Named in honor of *John George Batsch;* a German Botanist.]

Calyx deeply 5-parted. *Corolla* large, salver-form; limb nearly flat, orbicular, with 5 rounded lobes; throat naked; tube straight, longer than the calyx, closed at base by a bearded ring. *Nuts* imperforate at base, smooth, shining.

1. B. CANESCENS, *Mx.* Stem villose; leaves lance-oblong, rather obtuse, silky-pubescent above, subvillose beneath; tube of the corolla nearly twice as long as the calyx. *Beck, Bot. p.* 252. ICON, *Mx. Am.* 1. *tab.* 14. Also, *Bart. Am.* 2. *tab.* 58.
Anchusa virginica. *Willd. Sp.* 1. *p.* 758.
A. canescens. *Muhl. Catal. p.* 19.
Lithospermum canescens. *Torr. Fl.* 1 *p.* 203. *Ejusd. Comp. p.* 100. *Lindl. Ency. p.* 120.

HOARY BATSCHIA. *Vulgò*—Puccoon. Alkanet.

Root perennial, large, red. *Stem* about a foot high, several from the same root, nearly simple, sometimes trichotomously branched near the summit, clothed with hoary spreading hairs. *Leaves* about an inch and half long, and half an inch wide, with a midrib but no lateral nerves, sessile, lance-oblong, or sometimes linear-elliptic, obtuse, occasionally minutely emarginate (slightly mucronate, *Torr.*—which I do not observe in my specimens); both surfaces covered with appressed hairs, villous along the midrib beneath. *Flowers* axillary, crowded near the summit of the stems, or branches. *Calyx segments* lance-linear, acute, villose-ciliate, scarcely half as long as the corolla. *Corolla* bright orange-yellow, pubescent externally; tube striate, with a slight pubescent ring on the inside, at the bottom. *Stamens* subsessile in the throat of the corolla. *Style* scarcely half as long as the tube of the corolla. *Nuts* ovoid, hard and smooth.

Hab. Great Valley, near Brooke's Mill: rare. *Fl.* May. *Fr.* June.

Obs. This handsome little plant was detected in the above locality by Mr. GEO. W. HALL, in 1833. He has also found it, once, near Wagon-town; but it is quite rare. The *root* of it is called *Puccoon*, by the Aborigines; and is used by them for painting red. One other species occurs in the U. States.

88. ONOSMODIUM. *Mx. Nutt. Gen.* 174.

[So named from its resemblance to *Onosma*; another genus of plants.]

Calyx deeply 5-parted. *Corolla* tubular-campanulate; limb 5-cleft, the lobes acute, connivent; throat ventricose, naked. *Stamens* subsessile, included. *Style* much exserted. *Nuts* imperforate at base, ovoid, shining.

1. O. HISPIDUM, *Mx.* Whole plant hispid; stem branched; leaves oval-lanceolate, nerved, papillose-punctate; lobes of the corolla lanceolate. *Beck, Bot. p.* 252.
Lithospermum virginianum. *Willd. Sp.* 1. *p.* 752. *Ait. Kew.* 1. *p.* 287. *Muhl. Catal. p.* 19.
Purshia hispida. *Bart. Phil.* 1. *p.* 103.
HISPID ONOSMODIUM.

Root perennial. *Stem* about 2 feet high, branched, scabrous. *Leaves* 2 to 3 inches long, and about an inch broad, varying from oblong-lanceolate to lance-ovate, acute, sessile, nerved, hispid with appressed hairs proceeding from small papillæ. *Flowers* in terminal leafy racemes, at first recurved and nodding, finally erect. *Calyx-segments* subulate, hispid-ciliate. *Corolla* pale greenish yellow, rather longer than the calyx, pubescent; lobes lanceolate, acute, ciliate near the apex with a few bristles. *Style* twice as long as the corolla; *stigma* simple, small. *Nuts* ovoid, angular on the inner side, with numerous depressions on the surface, grey, shining, one or two often abortive.

Hab. Great Valley; Warren: Brooke's Mill, &c.: not common. *Fl.* June. *Fr.* Aug.

Obs. Collected by Mr. JOSHUA HOOPES, in 1828. A rough, homely, native weed. There is one other species in the U. States.

89. ECHIUM. *L. Nutt. Gen.* 176.

[Greek, *Echis*, a viper; from a fancied resemblance of the seed to a viper's head.]

Calyx 5-parted. *Corolla* irregular, subcampanulate; limb unequally and obliquely 5-lobed; throat open; tube short. *Stigma* bifid. *Nuts* imperforate at base, tuberculate, obliquely acuminate.

1. E. VULGARE, *L.* Stem tuberculate-hispid; leaves linear-lanceolate, hispid; flowers in lateral secund spikes; stamens longer than the corolla. *Beck, Bot. p.* 253.
COMMON ECHIUM. *Vulgò*—Blue weed. Viper's Bugloss. Blue Devils. *Gall.* Herbe aux Vipères. *Ger.* Der Natterkopf. *Hisp.* Yerba de la vibora.

Root biennial. *Stem* 2 to 3 feet high, branched above. *Radical leaves* long-lanceolate, petiolate; *stem leaves* linear-lanceolate, acute, sessile; all hispid and papillose. *Spikes* numerous, axillary, secund, and at first recurved, finally erect. *Calyx-segments* linear, pectinate-ciliate. *Corolla* at first purplish, finally bright blue, pubescent externally. *Stamens* exserted. *Style* filiform, pubescent, bifid at apex. *Nuts* subovoid, angular on the inner side, keeled on the back, a little incurved and acuminate, rough with tubercles, of a greyish brown color.

Hab. Near Downingtown: rare. *Fl.* June. *Fr.* August.

Obs. This vile foreign weed is extremely troublesome in some portions of our Country; but is fortunately rare, as yet, in Chester County. It behoves our farmers, however, to be on the alert, to keep it in subjection. It was first observed in the Great Valley, near Downingtown, in 1828, by Mr. JOSHUA HOOPES. The E. *violaceum* is cultivated in some flower gardens; but there is no native species,—and the foregoing is the only naturalized one in the U. States.

90. MYOSOTIS. *L. Nutt. Gen.* 169.

[Gr. *Mys, myos,* a Mouse, *Ous, otos,* an Ear; from the resemblance of the leaves.]

Calyx 5-cleft. *Corolla* salverform; limb with 5-subemarginate lobes; throat closed with 5 short connivent scales; tube short. *Nuts* smooth, ovate, with a small ring and cavity at base.

1. M. PALUSTRIS, *Roth.* Leaves lance-oblong, rather obtuse, somewhat scabrous with appressed hairs; peduncles of the fruit diverging, about twice as long as the spreading calyx; limb of the corolla flat, longer than the tube. *Beck, Bot. p.* 253.
M. scorpioides. *Willd. Sp.* 1. *p.* 746. *Mx. Am.* 1. *p.* 129. *Pers. Syn.* 1. *p.* 156. *Ait. Kew.* 1. *p.* 285. *Muhl. Catal. p.* 19. *Nutt. Gen.* 1. *p.* 112. *Lindl. Ency. p.* 118.
MARSH MYOSOTIS. *Vulgò*—Marsh Scorpion-grass. Forget-me-not. *Gall.*–Oreille de souris. *Ger.*–Vergiss mein nicht. *Hisp.*–Oreja de raton.

Root perennial, creeping. *Stem* 1 to 2 feet long, slender, erect or oblique, branched above, smoothish, sprinkled with somewhat appressed hairs. *Leaves* 1 to 3 inches long, and one third to 3 fourths of an inch wide, lance-oblong or linear-elliptic, mostly obtuse, narrowed at base, the upper ones sessile, lower ones often petiolate, scabrous when old. *Racemes* terminating the branches, sometimes in pairs, elongating, secund, without bracts, at first recurved; pedicels filiform, near half an inch long, and divergent when in fruit. *Calyx* somewhat pilose with appressed hairs; segments lanceolate, acute, spreading. *Corolla* small, bright blue; the throat closed with yellow connivent scales; limb nearly flat. *Nuts* somewhat compressed, ovate, with a keel-like margin, brown, smooth and shining.

Hab. Swampy rivulets, and spring-heads: common. *Fl.* May—Sept. *Fr.* July—Oct.

Obs. The oblong radical leaves continue vigorously green through the winter, especially in swampy fountains, or spring heads.

2. M. ARVENSIS, *Sibth.* Leaves oval-lanceolate, hairy; peduncles of the fruit somewhat erect, about as long as the closed calyx; limb of the corolla rather erect, as long as the tube. *Beck, Bot. p.* 253.
M. scorpioides, *var. a. Mx. Am.* 1. *p.* 129.
Also, M. verna. *Nutt. Gen.* 2. *Suppl.*
Also, Lycopsis virginica. *Pursh, Am.* 1. *p.* 133. *Eat? Man. p.* 215. Not? of *Willd. Pers.* nor *Nutt.*
FIELD MYOSOTIS.

Whole plant greyish pubescent. *Root* annual. *Stem* erect, at first nearly simple, at length branching, 3 to 6 and, finally, sometimes 12 inches high, clothed with spreading hairs. *Leaves* half an inch to an inch long, and a quarter to half an inch wide, lance-oval, or lance-oblong, rather acute, sessile, scabrous; the lower ones often lance-obovate, obtuse, and petiolate. *Racemes* terminal, at first short and crowded, at length elongated, bifarious (not secund), without bracts; pedicels one fourth of an inch long, rather erect. *Calyx* hispid with spreading and somewhat uncinate hairs; segments linear-lanceolate, acute, erect. *Corolla* very small, white; throat closed; limb somewhat erect. *Nuts* smooth, shining, violet brown, in form very like the preceding.

Hab. Dry hills: Serpentine ridge: not very common. *Fl.* May—June. *Fr.* July.

Obs. This species was first observed, here, in 1829. It is generally very diminutive when the flowers begin to appear; but the racemes finally stretch up, sometimes to the height of 12 or 15 inches. There are one or two other species (as the genus is at present constituted,) enumerated in the U. States.

91. SYMPHYTUM. *L. Gen. Pl.* 245.

[Greek, *Symphysis*, union; from its supposed virtue in uniting, or healing wounds.]

Calyx 5-parted. *Corolla* tubular-campanulate; limb with 5 short lobes; throat ventricose, closed with 5 lanceolate conniving scales; tube short. *Nuts* gibbous, imperforate at base.

1. S. OFFICINALE, L. *Leaves ovate-lanceolate, decurrent, somewhat rugose; racemes nodding.* Willd. Sp. 1. p. 770.

OFFICINAL SYMPHYTUM. Vulgò—*Comfrey. Garden Comfrey.*

Gall.—*Grande Consoude.* Ger.—*Der Beinwell.* Hisp.—*Consuelda major.*

Root *perennial, large, mucilaginous.* Stem 2 *to* 3 *feet high, branched, grooved or angular, and winged by the decurrence of the leaves hispidly and somewhat retrorsely pilose.* Leaves 8 *to* 12 *inches long, and* 3 *to* 5 *inches wide, scabrous, more or less lanceolate, acuminate; the lower ones petiolate, upper ones sessile, decurrent.* Racemes *very hispid, without bracts, rather crowded, nodding, and somewhat carved inward.* Calyx-segments *lanceolate, erect, bristly-hispid.* Corolla *yellowish white, rarely purplish; limb with* 5 *short revolute teeth, or lobes; throat ventricose, closed by* 5 *lanceolate scales, which are glandular-dentate on the margin.* Style *a little longer than the corolla.* Nuts *gibbous, angular, acuminate, blackish and shining.*

Hab. *Gardens; frequent.* Fl. *June.* Fr. *August.*

Obs. *This is frequently cultivated as a medicinal plant, and the root used, in popular practice, as a remedy for wounds and internal complaints. It doubtless possesses the virtues of a mucilage; and may, peradventure, be almost as* sovereign as "*Parmaceti, for an inward bruise*"! *It is the only species of the genus, known in the U. States.*

†† *Seeds fixed to the Style, or central column.*

92. ECHINOSPERMUM. *Lehm.*

[Gr. *Echinos*, Hedgehog, & *Sperma*, Seed; the fruit being covered with prickles.]

Calyx 5-parted. *Corolla* somewhat salverform; throat closed by 5 small connivent scales. *Nuts* echinate, compressed, or angular, fixed to a central column.

1. E. VIRGINICUM, *Lehm.* Leaves ovate-lanceolate, acuminate; racemes divaricate; fruit densely covered with uncinate prickles. *Beck, Bot. p.* 254.

Myosotis virginiana. *Willd. Sp.* 1. *p.* 748. *Mx. Am.* 1. *p.* 129. *Pers. Syn.* 1. *p.* 157. *Ait. Kew.* 1. *p.* 286. *Muhl. Catal. p.* 19. *Pursh, Am.* 1. *p.* 134. *Nutt. Gen.* 1. *p.* 112. *Bart. Phil.* 1. *p.* 101. *Ell. Sk.* 1. *p.* 225. *Bigel. Bost. p.* 73. *Florul. Cestr. p.* 24.

Rochelia virginiana. *Torr. Fl.* 1. *p.* 209. *Ejusd. Comp. p.* 102. *Eat. Man. p.* 307.

VIRGINIAN ECHINOSPERMUM. *Vulgò*—Beggar's Lice.

Root biennial? *Stem* 2 to 4 feet high, hairy, divaricately branched at summit. *Leaves* 3 to 4 inches long, and an inch to an inch and half wide, oblong-lanceolate and ovate-lanceolate, acute at each end, scabrous; lower ones petiolate, upper ones subsessile. *Racemes* terminating the branches, mostly dichotomous, bracteate; pedicels about as long as the fruit, finally reflexed. *Calyx-segments* lance-

ohate. *Corolla* bluish white, small. *Nuts* covered with hooked prickles, angular on the inner side, adhering at base to the style, or central column.

Hab. Borders of woods; fence-rows, &c. common. *Fl.* July. *Fr.* October.

Obs. This obnoxious weed is well known to our farmers, in consequence of its racemes of bur-like fruit entangling and matting the manes of their horses, and the fleeces of their sheep. There is one other species in the U. States, (E. *Lappula*)—which I have seen in the adjoining county of Berks; but I believe it has not yet been found in Chester county.

93. CYNOGLOSSUM. *L. Nutt. Gen.* 172.

[Greek, *Kyon*, a Dog, and *Glossa*, a tongue; from the form of the leaves.]

Calyx 5-parted. *Corolla* funnel-form; limb concave, 5-lobed; throat closed by 5 connivent scales; tube short. *Nuts* depressed, ovate, covered with rigid prickles.

1. C. OFFICINALE, *L.* Silky-pubescent; radical leaves lance-oblong, petiolate, stem leaves lanceolate, sessile; racemes paniculate. *Beck. Bot. p.* 254.

OFFICINAL CYNOGLOSSUM. *Vulgò*—Common Hounds tongue.

Gall.—Langue de Chien. *Germ.*—Die Hundszunge. *Hisp.*—Viniébla.

Whole plant clothed with a soft pubescence. *Root* biennial, fusiform. *Stem* about 2 feet high, paniculately branched above. *Radical leaves* 9 to 12 inches in length, and 2 to 3 inches wide, lance-oblong, petiolate; *stem leaves* 3 to 6 inches long and half an inch to an inch wide, linear-lanceolate, acute, sessile. *Flowers* numerous, in racemes, mostly erect, secund, and without bracts, on pedicels a fourth of an inch to half an inch long. *Calyx-segments* oblong-ovate, rather obtuse, expanded when in fruit. *Corolla* reddish or purplish brown (sometimes milk white) about as long as the calyx; limb concave; lobes rounded. *Nuts* depressed, ovate, attached to the central column by the under side of the apex, armed with rigid prickles which are minutely barbed round the obtuse point.

Hab. Road-sides, and about houses: frequent. *Fl.* May—June. *Fr.* Aug.

Obs. This species has been introduced;—and is extending itself throughout the County. It may be readily known by its disagreeable odor,—somewhat resembling that of *young mice*. The plant once had some reputation for medicinal properties; but is now, I believe, deservedly neglected.

2. C. VIRGINICUM, *L.* Hirsutely pilose; radical leaves oval-oblong, petiolate, stem-leaves lance-oblong, acute, sessile, amplexicaul and cordate at base; corymb terminal, on a long naked peduncle. *Beck, Bot. p.* 254.

C. amplexicaule. *Mx. Am.* 1. *p.* 132. *Pers Syn.* 1. *p.* 159. *Muhl. Catal. p.* 19. *Pursh, Am.* 1. *p.* 133. *Nutt. Gen.* 1. *p.* 114. *Bart. Phil.* 1. *p.* 102. *Bigel. Bost. p.* 72. *Florul. Cestr. p.* 22. *Lindl. Rncy. p.* 122. *Eat. Man. p.* 117.

VIRGINIAN CYNOGLOSSUM. *Vulgò*—Wild Comfrey. Hounds tongue.

Whole plant roughly pilose. *Root* perennial. *Stem* about 2 feet high, simple, rather slender, mostly leafless 6 or 8 inches below the corymb. *Radical leaves* about 6 inches long, and 3 inches wide, oval, or lance-obovate, narrowed at base to a petiole about 3 inches long: *stem leaves* 1 or 2 to 6 inches long, (diminishing as they ascend), and 1 to 2 inches wide, oblong, acute, cordate and subauriculate at base, closely embracing the stem. *Flowers* few, in a terminal corymbose panicle

of 2 or 3 principal branches, without bracts; pedicels one fourth to 3 fourths of an inch long. *Calyx* and peduncles very hairy. *Corolla* pale blue, or bluish white; limb erect-spreading; lobes ovate. *Nuts* resembling the preceding.

Hab. Rich woodlands: very common. *Fl.* May—June. *Fr.* August.

Obs. The root of this is mucilaginous; and is frequently used, in popular practice, as a pectoral medicine,—or as a cataplasm, for sprains, &c. It serves very well to amuse the patient. Two other species are enumerated in the U. States.

¶ ¶ *Seeds covered.* † *Fruit a Capsule.* * *Capsule* 1-*celled.*

94. ANAGALLIS. *L.* *Nutt. Gen.* 188.

[Greek, *Anagelao*, to laugh; from its supposed exhilarating virtues.]

Calyx 5-parted. *Corolla* rotate, deeply 5-parted. *Filaments* hirsute. *Capsule* globose, circumscissed or opening horizontally, many-seeded.

Herbaceous: stem quadrangular; leaves opposite; flowers solitary, axillary. *Nat. Ord.* 207. *Lindl.* PRIMULACEÆ.

1. A. ARVENSIS. *L.* Stem procumbent; leaves ovate, sessile, dotted beneath: lobes of the corolla crenulate and glandular-ciliate on the margin. *Beck, Bot. p.* 291.

FIELD ANAGALLIS. *Vulgò*—Red Chickweed. Scarlet Pimpernel. *Gallicè*—Mouron rouge. *Germ.*— Das Gauchheil. *Hisp.*—Anagálide.

Root annual. *Stem* 6 to 12 inches long, procumbent, branching near the root, acutely 4-angled, or slightly winged, smooth. *Leaves* three fourths of an inch long, and half an inch wide, ovate, acute, smooth, with dark dots beneath, margin minutely serrulate with transparent glandular teeth. *Flowers* axillary; peduncles longer than the leaves. *Calyx segments* subulate, very acute, keeled, scarious on the margin. *Corolla* orange red, or brick-dust color, with a purplish centre, longer than the calyx *Filaments* purple, hirsute with spreading hairs, which, under a lens, appear jointed or moniliform. *Style* persistent. *Capsule* glabrous, 5-nerved, opening hemispherically. *Seeds* dark brown, angular, scabrous.

Hab. Road sides, fields and gardens: frequent. *Fl.* June—Oct. *Fr.* Aug.—Octo.

Obs. This little foreigner is gradually extending itself through our County. It has been remarked, in Europe, that if the flowers be open in a morning, the day will prove fine,—if shut, the contrary; and hence they call it the *Shepherd's weather glass.* The plant once had some repute, amongst Empirics and their followers, as a remedy for Hydrophobia;—which fact may diminish our surprise that the *Skull-cap* (Scutellaria lateriflora) should, subsequently, acquire the same distinction.

95. LYSIMACHIA. *L.* *Nutt. Gen.* 187.

[Greek, *Lysis mache*, literally *Loose strife*; from some notion of its virtues.]

Calyx 5-parted. *Corolla* subrotate, deeply 5-parted. *Capsule* globose, mucronate, 5 or 10-valved, few or many-seeded.

Herbaceous: leaves opposite and verticillate; flowers axillary or terminal, solitary, spiked, or corymbose; filaments often glandular, dilated and partially united at base. *Nat. Ord.* 207. *Lindl.* PRIMULACEÆ.

1. L. STRICTA, *Ait.* Stem erect, glabrous; leaves opposite, lanceolate, subsessile, punctate; raceme terminal, long, loose; pedicels long, slender, bracteate at base. *Beck, Bot. p.* 290.

L. racemosa. *Mx. Am.* 1. *p.* 128. *Pers. Syn.* 1. *p.* 172. *Pursh, Am.* 1. *p.* 135. *Nutt. Gen.* 1. *p.* 121. *Bart. Phil.* 1. *p.* 104. Icon, *Bart. Am.* 1. *tab.* 1.

Upright Lysimachia.

Whole plant smooth. *Root* perennial. *Stem* 1 to 2 feet high, somewhat 4-angled, with a few axillary branches. *Leaves* about 3 inches long, and half an inch wide, acute and tapering at each end, nearly or quite sessile, punctate with oblong blackish dots, margin subrevolute, (frequently with small bulbs in the axils, *Torr.*). *Flowers* in a terminal raceme, 4 to 6 or 8 inches long; pedicels nearly an inch in length, spreading, with each a lance-linear *bract* at base one fourth of an inch long *Calyx-segments* lanceolate, acute. *Corolla* yellow, streaked with purple; lobes lanceolate, more than twice as long as the calyx. *Capsule* 5-valved, 5-seeded. *Torr.*

Hab. Swampy, low grounds: Kimberton: Pughtown: rare. *Fl.* June-July. *Fr* Sept.

Obs. This pretty species was first detected, in Chester County, by Miss A. Kimber,—to whom I am indebted for several rare plants from the vicinity of *Kimberton.* It has also been found by D. Townsend, Esq. on his farm near Pughtown, on the north side of the County.

2. L. quadrifolia, *L.* Stem simple, a little hairy; leaves verticillate in fours and fives, ovate-lanceolate, acuminate, subsessile, punctate; peduncles axillary, 1-flowered, in fours; lobes of the corolla ovate-oblong, obtuse, entire. *Beck, Bot. p.* 290.
L. hirsuta. *Mx. Am.* 1. *p.* 127. Also, *Muhl. Catal. p.* 20.

Four-leaved Lysimachia. *Vulgò*—Loose-strife.

Root perennial. *Stem* 1 to 2 feet high, simple, more or less pubescent. *Leaves* 2 to 3 inches long, and half an inch to an inch wide, lanceolate or ovate-lanceolate, rather acuminate, a little hairy beneath, and ciliate on the margin, punctate with oblong dark purple dots, in verticils of 3 to 6, but generally in fours or fives, nearly sessile. *Peduncles* long and slender, but shorter than the leaves. *Calyx-segments* linear-lanceolate, marked with dark purple dots and streaks. *Corolla* yellow, with short purple streaks; lobes twice as long as the calyx. *Stamens* unequal, (2 shorter); *filaments* glandular-pubescent, dilated at base, and somewhat monadelphous; anthers incumbent, purple. *Capsule* 5-valved, 5-seeded.

Hab. Thickets and low grounds: common. *Fl.* June. *Fr.* Aug.

3. L. ciliata, *L.* Stem nearly smooth; leaves opposite, subcordate-ovate, acuminate, on long ciliate petioles; peduncles mostly in pairs, 1-flowered; flowers somewhat nodding; corolla longer than the calyx. *Beck, Bot. p.* 290.
L. quadrifolia, *var.* ciliata. *Willd. Sp.* 1. *p.* 819.

Ciliate Lysimachia.

Root perennial. *Stem* 2 to 3 feet high, square, grooved, with a few axillary branches. *Leaves* 3 to 6 inches long, and 1 to 3 inches wide, lance-ovate, acuminate, more or less cordate at base, not punctate, minutely cartilaginous-serrulate on the margin; petioles an inch to an inch and half long, conspicuously ciliate. *Calyx-segments* lanceolate, acuminate. *Corolla* large, yellow; lobes sometimes short-acuminate, crenulate. *Stamens* nearly equal; *filaments* short, glandular, flatted, but scarcely dilated at base, with intermediate teeth, inserted into a ring near the base of the corolla; *anthers* linear, at length recurved. *Capsule* 5-valved, many-seeded.

Hab. Borders of woodlands: along rivulets: frequent. *Fl.* June, July. *Fr.* Aug. Sept.

4. L. HYBRIDA, *Mx.* Stem smooth, somewhat branched; leaves mostly opposite, lanceolate, acute at each end, on short ciliate petioles; flowers nodding; corolla about as long as the calyx. *Beck, Bot. p.* 290.

L. angustifolia ? *Muhl. Catal. p.* 20. *Bart. Phil.* 1. *p.* 105. Not of *Mx. Nutt. Pursh*, nor *Eat.*

L. heterophylla ? *Ell. Sk.* 1. *p.* 235. Also ? *Mx. Am.* 1. *p.* 127. *Pers. Syn.* 1. *p.* 172. *Nutt. Gen.* 1. *p.* 121. *Eat. Man. p.* 216.

HYBRID LYSIMACHIA.

Root perennial. *Stem* about two feet high, angular, grooved, branching from the axils. *Leaves* 2 to 3 inches long, and one third to half an inch wide, lanceolate, acute, not punctate, tapering at base to a sparingly ciliate petiole, one fourth to half an inch long, mostly opposite; those near the ends of the branches somewhat in fours. *Peduncles* 1 to 2 inches long, opposite, or in fours where the leaves are so. *Calyx-segments* ovate-lanceolate, acuminate. *Corolla* yellow, a little longer than the calyx; lobes abruptly acuminate, crenulate. *Stamens* nearly equal, with intermediate short processes. *filaments* glandular; *anthers* at length recurved. *Capsule* 5-valved, many-seeded.

Hab. Swamps, in the Mica-slate range: not common. *Fl.* July—Aug. *Fr.* Sept.

Obs. Dr. *Torrey* thinks this is scarcely more than a *variety* of the preceding. It is certainly nearly allied to it, in many respects; but seems to have some good distinguishing characters. It was first collected, here, in 1823, by D. TOWNSEND, Esq. Six or seven additional species are enumerated in the U. States;—some of which, however, are not very well established.

96. SABBATIA. *Adans. Nutt. Gen.* 206.

[Named after *Liberatus Sabbati;* an Italian Botanist.]

Calyx 5 to 12 parted. *Corolla* sub-rotate, 5 to 12-parted. *Stamens* 5 (sometimes 6). *Anthers* at length revolute. *Stigmas* 2, spiral. *Capsule* 2-valved, many-seeded.

Herbaceous: leaves opposite; flowers terminal on the subfastigiate or corymbose branches. *Nat. Ord.* 197. *Lindl* GENTIANEÆ.

1. S. ANGULARIS, *Pursh.* Stem acutely 4-angled, somewhat winged; leaves ovate, amplexicaul; peduncles elongated, corymbed; calyx-segments mostly 5, linear-lanceolate, much shorter than the corolla. *Beck, Bot. p.* 241.

Chironia angularis. *Willd. Sp.* 1. *p.* 1067. *Mx. Am.* 1. *p.* 146. *Pers. Syn.* 1. *p.* 282. *Muhl. Catal. p.* 24.

ANGULAR SABBATIA. *Vulgò*—Centaury.

Root annual ? (annual and biennial, *Torr.*). *Stem* 12 to 18 inches high, branched, smooth; branches opposite and erect, somewhat corymbose. *Leaves* about an inch long, and three fourths of an inch wide, ovate, or oblong-ovate, rather acute, sessile and closely embracing the stem. *Calyx* mostly 5-parted, (sometimes 6-parted, and then *hexandrous*), scarcely half the length of the corolla. *Corolla* pale red, or rose colored; lobes obovate, obtuse, veined, narrowed below. *Stigmas* linear, spirally twisted,—as also, finally, is the *style*. *Capsule* oblong-ovoid, mucronate, with a keeled suture on each side. *Seeds* very numerous, small, brown, scrobiculate, or rugosely pitted (under a lens).

Hab. Sterile old fields: Serpentine ridge: frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This handsome plant is intensely bitter, and deservedly popular as a tonic medicine. Seven or eight additional species are enumerated in the U. States.

97. ERYTHRÆA. *Rich. Pers. Syn.* 1. *p.* 283.
[Greek, *Erythros*, red; in allusion to the color of the flowers.]

Calyx appressed, 5-angled, 5-parted. *Corolla* funnel-form; limb short, 5-lobed. *Anthers*, after flowering, spirally twisted. *Style* erect; *stigmas* 2 (rarely simple). *Capsule* sublinear, 1-celled, 2-valved.

Herbaceous: stem 4-angled; leaves opposite, entire; flowers axillary and terminal. *Nat. Ord.* 197. *Lindl.* GENTIANEÆ.

1. E. PULCHELLA, *Hook.* Stem dichotomously branched; leaves ovate-oblong; flowers pedunculate; calyx nearly as long as the tube of the corolla. *Hook. British Flora, Ed.* 2. *p.* 107.
E. ramosissima, *var.* inaperta? *Pers. Syn.* 1. *p.* 233.
Chironia pulchella. *Willd? Sp.* 1. *p.* 1067. *Ait. Kew.* 2. *p.* 6. *Muhl. Catal. p.* 24.
Also? C. inaperta. *Willd. l. c. p.* 1069.

HANDSOME ERYTHRÆA.

Root annual. *Stem* 2 to 6 inches high, dichotomously or sometimes brachiately branched, rarely simple, 4-angled, smooth, angles slightly winged. *Leaves* about half an inch long, and an eighth to a quarter of an inch wide, ovate-oblong or ovate-lanceolate, rather acute, closely sessile. *Flowers* axillary, solitary, or terminating the branches in pairs, generally one in the forks of the stem or branches, on angular peduncles an eighth to near half an inch in length. *Calyx* 5-angled, 5-parted; segments subulate, erect, closely appressed and even slightly adhering to the tube of the corolla, at first nearly as long as the tube, finally little more than half as long. *Corolla* with the limb bright purple, 5-parted, (occasionally 4-parted and tetrandrous), lobes lance-ovate, mostly erect, or conniving; tube yellowish green, near half an inch long, contracted between the throat and ovary, somewhat ventricose thin and membranaceous below, adhering to the ovary, and shrivelling. *Anthers* a little twisted after flowering. *Style* bifid at apex; *stigmas* compressed, suborbicular. *Capsule* 1-celled, 2-valved; valves opening at summit and recurving. *Seeds* numerous, small, rugose-punctate.

Hab. Great Valley, near Brooke's Mill: very rare. *Fl.* July-Sept. *Fr.* Aug-Oct.

Obs. I do not find this handsome little plant noticed by any American Botanist, except *Muhlenberg*;—though Dr. PICKERING informs me it is the one intended by Dr. *Beck*, under the name of E. *Centaurium*, found in New York. Dr. P. has found it, himself, on the Eastern Shore of Virginia. Our plant was first detected in July, 1835, by Mr. WILLIAM HARTMAN, a zealous and promising young Botanist, of this County. It appears as if it might be indigenous in the above locality; and yet one would suppose if it were so, it would be more extensively distributed. It is the only species in the U. States,—unless Dr. *Beck's* E. *Centaurium* be distinct. *Lestiboudois*, however, in his *Botanographie Belgique*, expresses the opinion that the E. *pulchella* is only a *variety* of E. *Centaurium*.

98. HYDROPHYLLUM. *L. Nutt. Gen.* 178.
[Gr. *Hydor*, Water, and *Phyllon*, a leaf; the cavities of the leaves holding water.]

Calyx 5-parted. *Corolla* subcampanulate, 5-cleft, with 5 longitudinal margined grooves on the inside. *Stamens* exserted. *Stigma* bifid. *Capsule* globose, 2-valved, 4-seeded, with 3 of the seeds abortive.

Herbaceous: leaves pinnatisected, or palmate; flowers corymbose; corymbs pedunculate, terminal, or opposite the leaves. *Nat. Ord.* 226. *Lindl.* HYDROPHYLLEÆ.

1. H. VIRGINICUM, *L.* Stem nearly smooth; leaves pinnatisected, lobes oval-lanceolate, deeply serrate, lower ones distinct; corymbs fascicled, recurved, on peduncles longer than the petioles of the upper leaves. *Beck, Bot. p.* 255.

VIRGINIAN HYDROPHYLLUM.

Root perennial. *Stem* 12 to 18 inches high, often dichotomously branched near the base, nearly naked, with one or two leaves at summit. *Leaves* irregularly pinnatisected, about 5 lobed, the two lower lobes distinct and somewhat distant; *petioles* of the radical and lower leaves 4 to 6 or 8 inches long, those at summit 1 to 2 inches long. *Flowers* in clustered corymbs; the common peduncles 2 to 5 inches long, axillary, or opposite to the petioles of the upper leaves. *Calyx segments* lance-linear, acute, hispid-ciliate, shorter than the corolla. *Corolla* white, with purplish veins; lobes ovate-oblong, obtuse, often emarginate, or crenately notched. *Filaments* hairy; *anthers* oblong, incumbent. *Ovary* hirsute. *Seeds* 4, one of them large and round, the others abortive.

Hab. Moist shaded grounds; along Brandywine: frequent. *Fl.* May. *Fr.* June.

Obs. Two or three additional species are known in the U. States. *Muhlenberg* enumerates 5 others.

* * *Capsule 2 to 5-celled.*

99. POLEMONIUM. *L. Nutt. Gen.* 195.

[Gr. *Polemos*, war; from the belligerent claims of two Kings to the discovery of it.]

Calyx campanulate, 5-cleft, persistent. *Corolla* campanulate-rotate; limb 5-lobed; tube short, closed by the dilated bases of the 5 filaments. *Stigma* 3-cleft. *Capsule* roundish-ovoid, 3-celled, 3-valved; cells many-seeded.

Herbaceous: leaves alternate, pseudo-pinnate with an odd leaflet; flowers terminal, somewhat corymbose. *Nat. Ord.* 200. *Lindl.* POLEMONIACEÆ.

1. P REPTANS, *L.* Stem weak, branched; leaves pseudo-pinnate by 7's, 9's, and 11's; flowers terminal, nodding. *Beck, Bot. p.* 248.

CREEPING POLEMONIUM. *Vulgò*—Jacob's Ladder. Greek Valerian.

Root perennial, creeping. *Stem* 12 to 18 inches high, succulent, erect or oblique, branching, smooth, or slightly pubescent. *Leaflets* 5 to 11, (mostly 7 or 9,) about an inch long, and half an inch wide, lance-ovate, acute, smooth, sessile, mostly opposite, the terminal one lance-obovate; common petiole slightly winged, ciliate-pubescent. *Flowers* terminating the branches, in small nodding corymbose clusters. *Calyx-segments* lance-ovate, acute. *Corolla* blue, rather large, about three times as long as the calyx; lobes short, obovate, rounded. *Stamens* shorter than the corolla, unequal; *filaments* dilated into connivent ciliate valves at base; *anthers* roundish. *Capsule* on a short pedicel, in the enlarged, persistent, veined, green and somewhat membranous calyx.

Hab. Moist low grounds: meadows and woodlands: frequent. *Fl.* May. *Fr.* June.

Obs. A handsome little plant; frequently introduced into flower gardens. It is the only species in the U. States.

100. PHLOX. *L. Nutt. Gen.* 193.

[Greek, *Phlox*, flame, or fire; in allusion to the color of the flowers.]

Calyx prismatic, 5-cleft; segments mostly connivent, or erect. *Corolla* salverform; limb flat, with 5 cuneate lobes; tube long, more or less

curved. *Stamens* very unequal, inserted in the tube of the corolla above the middle. *Stigma* 3-cleft. *Capule* roundish-ovoid, 3-celled; cells 1-seeded.

Herbaceous: leaves mostly opposite and sessile, simple; flowers terminal, more or less corymbose-paniculate; calyx-segments nearly subulate. *Nat. Ord.* 200. *Linn.* POLEMONIACEÆ.

1. P. MACULATA, *L.* Stem erect, roughish, spotted; leaves ovate-lanceolate, acute or acuminate, smooth; panicle oblong, many-flowered; calyx-segments lanceolate, a little recurved. *Beck, Bot. p.* 246. Icon. *Bart. Am.* 2. *tab.* 69.

SPOTTED PHLOX. *Vulgò*—Wild Sweet William.

Root perennial. *Stem* about 2 feet high, mostly simple, roughish-pubescent above, spotted with dark purple. *Leaves* 1 to 5 inches long, and one fourth of an inch to an inch wide; the upper ones short, lance-ovate, acuminate, becoming longer and more lanceolate below, and tapering to a long narrow point; the lowest ones narrow, and nearly or quite linear; generally all of them opposite (sometimes in verticils of three). *Flowers* clustered in pedunculate axillary corymbs, at and near the summit, forming altogether a sort of oblong panicle; *bracts* subulate-linear, near an inch long. *Calyx* angled by 5 prominent ribs, or keels, membranaceous between the ribs; segments lanceolate, acuminate, the points spreading. *Corolla* bright purple; lobes a little rounded; tube nearly an inch long, curved, smooth. *Style* filiform, long, somewhat persistent. *Capsule* obovoid, mucronate, minutely pitted, or rugose-punctate. *Seeds* lance-oblong.

Hab. Low swampy grounds, and margins of rivulets; frequent. *Fl.* June. *Fr.* Aug.

Obs. A showy, beautiful species,—worthy the attention of the Florist; and, indeed, are most of the genus.

2. P. ARISTATA, *Mx.* Stem erect, weak, viscid-pubescent; leaves lance-linear, pubescent; panicle lax, subfastigiate; calyx-segments long, slender, acuminate, awnlike; lobes of the corolla entire. *Beck, Bot. p.* 247.

P. pilosa? *Willd. Sp.* 1. *p.* 840. *Ait. Kew.* 1. *p.* 325. *Nutt. Gen.* 1. *p.* 125. *Bart. Phil.* 1. *p.* 107. *Florul. Cestr. p.* 26. Also? *Mx. Am.* 1. *p.* 145. *Pers. Syn.* 1. *p.* 186. *Muhl. Catal. p.* 21. *Pursh, Am.* 1. *p.* 150. *Ell. Sk.* 1. *p.* 247. *Eat. Man. p.* 261.

AWNED PHLOX.

Root perennial. *Stem* 12 to 18 inches high, simple or not unfrequently branched, slender, villose-pubescent and somewhat viscid, especially at summit. *Leaves* 1 to 2 inches long, and one eighth to one fourth of an inch wide, lance-linear, acute, (sometimes those above wider at base, and ovate-lanceolate). *Flowers* terminal, loosely corymbose, often on spreading branches; peduncles villous, one fourth to one third of an inch long; *bracts* subulate, or lanceolate, about half an inch long. *Calyx* villose; segments subulate, very slender, the points a little spreading. *Corolla* pale red, sometimes nearly white; tube three fourths of an inch long, nearly straight, pubescent. *Style* short; *stigma* 3-cleft; segments linear, longer than the style.

Hab. Borders of woodlands and thickets: frequent. *Fl.* May. *Fr.* July.

Obs. This is P. *pilosa*, of *Florul. Cestrica;* and also, I apprehend, of the authors above cited. Dr. *Aikin* (*fide Eaton*) is of opinion it is synonymous with P. *divaricata:* but it is surely, I think, distinct from our plant of that name.

3. P. DIVARICATA, *L.* Stem decumbent, pubescent; leaves oval-lanceolate, or lance-ovate, acute, smoothish, membranaceous, margin ciliate; panicle loose, corymbose, somewhat trichotomous; peduncles diverging; calyx-segments linear, acute; lobes of the corolla emarginate. *Beck. Bot. p.* 247.

DIVARICATE PHLOX.

Root perennial, creeping. *Stems* 9 to 15 inches long, numerous, spreading, decumbent, some of them nearly procumbent (resembling *stolones*), with erect branches. *Leaves* an inch to an inch and half long, and half an inch to 3 quarters wide, sparingly pilose, thin and somewhat membranaceous; those on the suckers, or young branches, lance-oval, nearly acute at base; those on the flowering stems lance-ovate, the upper pairs distant, somewhat cordate and amplexicaul at base. *Panicle* terminal, loose, few-flowered, subtrichotomous; peduncles often dichotomous, subdivaricate, somewhat glandular-pubescent, half an inch to 3 quarters in length; *bracts* lanceolate. *Calyx-segments* long, linear, erect, ciliate-pubescent. *Corolla* bluish or dark purple; tube about 3 fourths of an inch long, slightly curved, smooth. *Style* short; *stigma* 3-cleft; segments longer than the style.

Hab. Banks of Schuylkill, below Black Rock: not common. *Fl.* May. *Fr.* July.

Obs. First collected, here, by D. TOWNSEND, Esq. in 1831.

4. P. REPTANS, *Mx.* Stem erect, with procumbent stolones or suckers at base, pubescent; radical leaves spatulate-obovate, petiolate; stem leaves ovate-lanceolate, sessile; corymb few-flowered, divaricate; calyx-segments long-lanceolate, acute, recurved; lobes of the corolla roundish-obovate. *Beck. Bot. p.* 247.

P. stolonifera. *Pursh, Am.* 1. *p* 150. *Lindl. Ency. p.* 132.

CREEPING PHLOX.

Root perennial. *Stem* 4 to 6 or 8 inches high, with procumbent or assurgent suckers branching off in all directions from the base, bearing obovate subsessile leaves. *Leaves* about an inch long, and half an inch wide, thickish, or a little succulent, all more or less pilose, and ciliate on the margin. *Pubescence* transparent, somewhat glandular, and apparently articulated (under a lens). *Calyx-segments* linear-lanceolate, keeled, pilose. *Corolla* deep purple, large; tube about an inch long, a little curved, smooth. *Style* filiform, as long as the tube of the corolla.

Hab. Hilly upland; near Paoli: very rare. *Fl.* May. *Fr.* July.

Obs. This beautiful species was detected in 1831, by Mr. GEO. W. HALL, on a bank about one and a half miles S. E. from *Paoli*,—the well known residence of Gen. *Joshua Evans*. I believe it has not been found elsewhere, in Chester County.

5. P. SUBULATA, *L.* Stem procumbent, cespitose, much branched; branches assurgent, pubescent; leaves linear-subulate, rigid, ciliate; corymbs few-flowered; calyx-segments subulate; lobes of the corolla cuneate, emarginate. *Beck, Bot. p.* 247.

SUBULATE PHLOX. *Vulgò*—Mountain Pink. Ground Pink.

Root perennial, creeping. *Stem* prostrate, 8 to 12 or 18 inches long, with numerous assurgent branches 2 to 4 inches high. *Leaves* about half an inch long, narrow, lance-linear, cuspidate, sessile, opposite, generally with smaller leaves, or rudiments of branches, in the axils; those on the stem fasciculate. *Corymb* 3 to 6-flowered. *Calyx* villose; segments keeled, scarcely half as long as the tube of the corolla. *Corolla* pink, or bright purple, with a darker purple centre—(sometimes white); tube about half an inch long, a little curved, smooth. *Style* filiform, nearly as long as the tube of the corolla.

Hab. Sterile, rocky hills; Serpentine ridge, abundant. *Fl.* April—May. *Fr.* July.

Obs. This species seems to be very much confined to the Serpentine rock, with us. It is very abundant there; and when in full bloom, the hills, at a distance, appear as if covered with a sheet of flame. There are about a dozen other species enumerated in the U. States;—some of which are often to be met with in the flower gardens.

101. CONVOLVULUS. *L. Nutt. Gen.* 190.

[Latin, *Convolvo*, to entwine, or wind about; descriptive of the plant.]

Calyx 5-parted, or 5-sepalled, naked, or with 2 *bracts* at base. *Corolla* campanulate, obsoletely 5-lobed, plicate. *Stamens* shorter than the corolla. *Stigmas* lobed, or capitate. *Capsule* 2 to 3-celled, 2 to 3-valved; cells 1 to 2-seeded.

Herbaceous: root lactescent; stem mostly volubile or twining; leaves alternate; peduncles axillary. *Nat. Ord.* 193. *Lindl.* CONVOLVULACEÆ.

1. C. SPITHAMÆUS, *L.* Hoary-pubescent; stem somewhat erect; leaves obovate-oblong, obtuse or acute, subcordate at base; peduncles 1-flowered; bracts close to the flower, much larger than the calyx. *Beck, Bot. p.* 249.

C. stans. *Mx. Am.* 1. *p.* 136. *Pers. Syn.* 1. *p.* 180 *Bart. Phil.* 1. *p.* 158. *Bigel. Bost. p.* 79. Also, *Muhl. Catal. p.* 22. *Nutt. Gen.* 1. *p.* 123.

Calystegia spithamea. *Pursh, Am.* 1. *p.* 143. *Lindl. Ency. p.* 140. *Also*, C. tomentosa. *Pursh, l. c.*

SPAN-LONG CONVOLVULUS.

Root perennial? *Stem* 8 to 12 inches long, erect or oblique, sometimes nearly procumbent, the procumbent specimens often with assurgent branches. *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, often rounded at apex, sometimes acute, on petioles one fourth to three fourths of an inch long. *Peduncles* 2 to 4 inches long; bracts cordate-ovate, enclosing the calyx. *Calyx* deeply 5-parted, or rather of 5 lance-oval membranaceous sepals, about two thirds the length of the bracts. *Corolla* white, about an inch and half long. *Stigmas* oblong.

Hab. Dry, hilly woodlands: frequent. *Fl.* June. *Fr.* Aug.

Obs. This species is very irregular in its appearance;—being quite abundant in some seasons,—and then almost entirely disappearing for several years; which leads me to suspect that the root is not perennial—though I have not had occasion to ascertain the fact. We have a pretty distinct *Variety*, which I presume to be the C. *stans*, of *Mx.* and others. The *stem* is usually simple, and quite erect; *leaves* elliptic-lanceolate, acute, or acuminate, rather obtuse and unequal at base, subsessile, or with a petiole one eighth to one fourth of an inch long; *peduncles* usually 2, erect, in the axils of the two lower leaves;—whereas in the leaning, or procumbent variety, there are frequently several ascending branches, the leaves are generally obovate-oblong, and often very obtuse, somewhat cordate at base, on petioles half an inch or more in length, with the peduncles from the axils of the superior leaves,—or at least half way towards the summit. I think, however, it is scarcely more than a variety.

2. C. SEPIUM, *L.* Stem twining; leaves acute, sagittate, with the lobes truncate; peduncles 4-angled, 1-flowered; bracts close to the flower, cordate, larger than the calyx. *Beck, Bot. p.* 249.

C. repens. *Mx. Am.* 1. *p.* 137. *Ell. Sk.* 1. *p.* 255. *Eat. Man. p.* 104. Also, *Muhl. Catal. p.* 22.
Calystegia Sepium. *Pursh, Am.* 1. *p.* 142. *Lindl. Ency. p.* 140.

Hedge Convolvulus.

Root perennial, descending deep into the earth. *Stem* 3 to 5 or 6 feet long, climbing, or trailing, nearly smooth. *Leaves* 2 to 4 inches long, and 1 to 2 and an half inches wide, oblong, or often somewhat triangular, cordate-sagittate, with the lobes mostly obliquely truncate, on petioles 1 to 3 inches long. *Peduncles* 4 to 6 or 8 inches long, 4-angled (sometimes terete?); *bracts* oblong-cordate, acute, almost one third the length of the corolla, resembling an outer calyx. *Calyx* of 5 oblong-lanceolate acute membranaceous sepals, more than half as long as the bracts. *Corolla* white, with a rose-colored limb, about 3 inches long. *Style* as long as the stamens, and about half as long as the corolla; *stigmas* oblong, or oval, white.

Hab. Moist low grounds: Forks of Brandywine: not common. *Fl.* June. *Fr* Aug.

Obs. This species is abundant at Wynn's meadows, and occurs in other places along the Brandywine; but is not generally diffused. It was collected by Mr. Joshua Hoopes, in 1834.

3. C. arvensis. *L.* Stem twining; leaves obtuse, sagittate-hastate with the lobes acute; peduncles mostly 1-flowered; bracts remote from the flower, minute. *Beck, Bot. p.* 248.

Field Convolvulus. *Vulgò*—Bind-weed.

Gall.–Liseron des champs. *Germ.*–Die Ackerwinde. *Hisp.*–Corregüela.

Root perennial, creeping, long. *Stem* about 2 feet long, branching, procumbent, or twining round other plants, twisted, a little hairy. *Leaves* an inch to an inch and a half long, and half an inch to an inch wide, ovate-oblong, the smaller ones rather acute, the larger ones obtuse, and a little emarginate, all of them with a minute cusp at the end of the mid-rib, hastate, the distance between the points of the lobes about equal to the length of the leaf; *petioles* half an inch to an inch long. *Peduncles* 1 to 2 and an half inches long, slender, with 2 minute *bracts* half an inch to an inch below the flower. *Calyx* short; segments very obtuse, or rounded. *Corolla* pale red, or reddish white, about 3 fourths of an inch long. *Stigma* 2-lobed; lobes long, linear. *Capsule* globose, mucronate. *Seeds* angular, brown.

Hab. Cultivated grounds; near Downingtown: rare. *Fl.* June—July. *Fr.* Aug.

Obs. This is an introduced plant; and, happily, rare in the county. Collected by D. Townsend, Esq. in 1831. It has been found exceedingly pernicious in cultivated grounds, in Europe,—choking and destroying whole crops; and is, moreover, very difficult to subdue. Nothing short of total eradication will effect its destruction. It therefore behoves our farmers to attend to it, whenever they find it on their premises. Prof. *Eaton* and Dr. *Beck* are entirely mistaken in supposing this may be the C. *sagittifolius*, of *Mx.* I have received the latter from my friend Mr. Curtis, of N. Carolina; and find it to be a totally distinct plant.

4. C. panduratus, *L.* Stem twining; leaves cordate, or panduriform, acuminate, lobes rounded; peduncles 1 to 5-flowered; bracts small, at the base of the peduncles; flowers fasciculate; corolla tubular-campanulate. *Beck, Bot. p.* 249.

Fiddle-form Convolvulus. *Vulgò*—Wild potato-vine.

Root perennial, large. *Stem* 4 to 6 or 8 feet long, generally trailing, smoothish. *Leaves* about 3 inches long, and 2 to 2 and a half inches wide, roundish-cordate

sinus rather contracted, lobes rounded, apex acuminate—sometimes the sides contracted, or sub-lobed, giving the leaves somewhat of a fiddleshape; petioles 1 to 2 and an half inches long. *Peduncles* 2 to 4 or 5 inches long, terete, often branched at summit, generally bearing 2 or 3 to 5 flowers, in fascicles; *bracts* at the base of the peduncles, small, resembling stipules. *Calyx* of 5 ovate-oblong sepals (or deeply 5-parted), about one fourth the length of the corolla, slightly mucronate, 2 of them exterior, a little shorter, and obtuse. *Corolla* white, with a pink tube, or purple at the bottom, about 2 inches long. *Style* about 3 fourths of an inch long; *stigmas* short, subglobose.

Hab. Old fields, and borders of woods: frequent. *Fl.* July—Aug. *Fr.* Sept,

Obs. The specimens with fiddle-shaped leaves have generally a broad shallow sinus at base, with the calyx often roughish-pubescent, and seem, indeed, to constitute a pretty distinct *variety*. They are less common than the others, with us.

5. C. Batatas, L. *Stem creeping; leaves subhastate-cordate, 5-nerved, partially 3-lobed; peduncles many-flowered; flowers fasciculate.* Mx. Am. 1. p. 138.

Potato Convolvulus. Vulgò—*Sweet Potato. Carolina Potato.* Hispanicè—*Batáta de Malaga.*

Root *perennial, tuberous; tubers oblong, terete, acute at each end, purple, or yellowish white.* Stem 4 *to* 8 *feet long, prostrate, radicating, angular, often dilated, pilose.* Leaves 2 *to* 3 *inches long, and* 2 *inches or more wide, subhastate-cordate with a shallow sinus, imperfectly* 3*-lobed, acute, pilose; petioles about* 2 *inches long, pilose.*

Hab. *Gardens, and lots: frequent.* Fl. Fr.

Obs. *This exotic species is frequently cultivated, here, for its fine esculent tubers: But those produced in the sandy soil of* New Jersey *are considered so much superior, in quality, that our chief supply is derived from thence. The plant is propagated by cuttings of the tubers, which are planted in the beginning of May. It never produces flowers, with us.* Lindley *says this is the Potato of* Shakspeare, *and contemporary writers;—the* Solanum tuberosum, *or* Irish potato, *(now so common,) being then scarcely known in Europe.*

6. C. purpureus, *L.* Twining and climbing; leaves cordate, acuminate, entire; peduncles 2 to 3-flowered; pedicels thickened, nodding, mostly without bracts. *Beck, Bot. p.* 249.

Ipomæa purpurea. *Pers. Syn.* 1. *p.* 183. *Pursh, Am.* 1. *p.* 146. *Torr. Fl.* 1. *p.* 226. *Ejusd. Comp. p.* 108. *Lindl. Ency. p.* 138.

Purple Convolvulus. *Vulgò*—Morning Glory.

Root annual. *Stem* 6 to 12 or 15 feet long when permitted to climb, hairy. *Leaves* 2 to 6 inches in length, and as wide as long, roundish-cordate, acuminate, on petioles 2 to 5 inches long. *Peduncles* 1 to 2 or 3 inches long, sometimes very short and 1-flowered, with 2 or 3 subulate bracts at the base of the clavate pedicels. *Calyx* deeply 5-parted, hairy; segments lanceolate. *Corolla* 1 to 2 inches long, whitish, with a purple, blue, or variegated limb, sometimes all white. *Style* about half as long as the corolla; *stigma* white, capitate, subtrilobed by 3 grooves. *Capsule* globose, mucronate, smooth, 3 celled.

Hab. Gardens, and lots: frequent. *Fl.* July—Sept. *Fr.* August—Octo.

Obs. This is an introduced plant; but is well known, and almost naturalized, about our gardens, and cultivated lots. Seven or eight additional species are enumerated in the U. States.

102. DATURA. *L. Nutt. Gen.* 200.

[Etymology obscure; supposed to be from *Tátôrăh*; the Arabic name of the plant.]

Calyx tubular, 5-angled, 5-cleft at summit, deciduous; the base persistent, orbicular. *Corolla* funnel-form; limb 5-angled, plicate; tube long. *Capsule* ovoid, echinate, or smooth, 4-valved, 2 to 4-celled; cells many-seeded.

Herbaceous: fetid and narcotic; leaves somewhat in pairs; flowers on short peduncles, large, solitary, and axillary, or in the forks of the branches. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

1. D. STRAMONIUM, *L.* Stem dichotomously branched; leaves ovate, sinuate-dentate, smooth; capsule echinate, erect. *Beck, Bot. p.* 259.
Vulgò—James-town (or corruptly, *Jimson*) weed. Thorn-apple.
Gall.—Pomme épineuse. *Germ.*—Der Stechapfel. *Hisp.*–Estramónio.

Root annual. *Stem* 2 to 5 feet high, terete, pale yellowish green, (or dark purple,) smooth, somewhat fistular. *Leaves* 4 to 6 or 8 inches long, and 3 to 5 inches wide, ovate, sinuate, or somewhat angular-dentate, often in opposite pairs, sometimes alternate, on petioles 1 to 3 or 4 inches long. *Calyx* nearly half as long as the corolla, slightly pubescent. *Corolla* yellowish white, (or bluish purple,) about 3 inches long; limb campanulate, plicate, with 5 acuminate teeth. *Stamens* shorter than the corolla. *Style* as long as the stamens; *stigma* bilamellate. *Capsule* ovoid, an inch and half long, and an inch or more in diameter, erect, armed with sharp spreading spines, 4-valved, opening at summit, 4-celled, 2 of the cells often incomplete; *peduncle* about half an inch long. *Seeds* numerous, somewhat reniform, rugose, black.

Hab. Among rubbish; in lanes, woodyards, &c. frequent. *Fl.* July–Aug. *Fr.* Sept.

Obs. The *true* D. *Stramonium*, with *yellowish stems*, and *white flowers*, is rather scarce in Chester County. I have only met with it in a few localities, about public houses, along the Strasburg road. The *var. Tatula, Torr.* (D. *Tatula, Willd. Pers. Pursh,* &c.) with *dark purple stems*, and *bluish purple flowers*, is very common. It is usually of a larger growth than the other variety; but with the exception of size and color, I can perceive no material difference. This distinction, however, is very constant; and some respectable Botanists persist in regarding them as two species. The D. *Stramonium* is a powerful narcotic,—and therefore rather dangerous in unskilful hands; but with judicious, cautious management, will doubtless prove to be a valuable article of the Materia Medica. For an interesting account of its properties, See Dr. *S. Cooper's Inaugural Thesis. Philadelphia,* 1797. This plant is familiarly known here as an obnoxious weed,—and has been, from time immemorial; but it has every appearance of being an exotic. It is the only species naturalized in the U. States.

103. NICOTIANA. *L. Nutt. Gen.* 202.

[Named after *John Nicot*; a French ambassador, who introduced it into France.]

Calyx somewhat urceolate, 5-cleft, persistent. *Corolla* funnel-form; limb spreading, plicate, 5-lobed. *Stamens* ascending. *Capsule* roundish-ovoid, 2 to 4-valved, 2-celled, many-seeded. *Seeds* minute.

Herbaceous, or suffruticose: leaves alternate; flowers terminal, racemose or paniculate. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

1. N. TABACUM, L. *Leaves lance-ovate, sessile, decurrent; lobes of the corolla acute.* Willd. Sp. 1. p. 1014.
Vulgò—*Tobacco.*

Gallicè—*Tabac.* Germanicè—*Der Taback.* Hispanicè—*Tabaco.*

Whole plant viscid-pubescent. Root *annual.* Stem 4 *to* 5 *or* 6 *feet high, panicklately branching above.* Leaves 1 *to* 2 *feet long, and* 6 *to* 12 *inches wide, smaller near the summit of the stem, lance-ovate, acute or acuminate, sessile, amplexicaul, and decurrent.* Calyx *about one third the length of the corolla, ventricose; segments lanceolate, erect.* Corolla *about* 2 *inches long*; limb *rose-colored, spreading; segments acuminate*; tube *pale yellowish green.* Style *nearly as long as the corolla*; stigma *capitate, emarginate.* Capsule *ovoid, sulcate on each side, 2-valved, opening at summit.* Seeds *minute, reniform, rugose.*

Hab. *Gardens, and small lots: not common.* Fl. *July—Aug.* Fr. *Sept.*

Obs. *This is sometimes cultivated, by old fashioned tobacco-chewing farmers, for home consumption; but the chief supply is derived from* Maryland, Virginia, *and* Ohio. *It is a plant of powerful medical properties; but, unfortunately, is abused, like* Alcohol, *by daily and excessive use. There is another species, naturalized, in the western parts of the U. States.*

104. VERBASCUM. *L. Nutt. Gen.* 203.

[Quasi *Barbascum*: Latin, *Barba*, beard; from its bearded, or woolly habit.]

Calyx 5-parted. *Corolla* rotate, 5-lobed, unequal. *Stamens* declined; filaments mostly hairy. *Capsule* ovoid, or globose, 2-celled, 2-valved; valves inflected. *Seeds* numerous.

Herbaceous, or suffruticose: leaves alternate; flowers in dense spikes, or paniculate racemes. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

1. V. THAPSUS, *L.* Stem simple, erect, tomentose; leaves lance-oval, or ovate-oblong, decurrent, very woolly on both sides; flowers in a long dense terminal spike; stamens unequal, two of them smooth. *Beck, Bot. p.* 259.

Vulgò—Mullein. Common Mullein.

Gall.—Bouillon blanc. *Germ.*—Das Wollkraut. *Hisp.*—Gordolóbo.

Whole plant tomentose; pubescence much branched. *Root* biennial. *Stem* 3 to 6 feet high, leafy. Radical *leaves* 9 to 12 inches long, and 3 or 4 inches wide, lance-oblong, acute; those on the stem smaller, sessile, decurrent. *Flowers* in a long terminal cylindric spike, bracteate at base. *Calyx-segments* lanceolate, acute, very woolly externally, smooth within. *Corolla* bright yellow; lobes rather erect, pubescent externally. *Style* clavate.

Hab. Neglected fields; roadsides; &c. very common. *Fl.* June-July. *Fr.* Aug.-Sept

Obs. I have occasionally met with what I suppose to be a *variety* of this,—with the spike less dense, the bracts larger, the stem-leaves ovate, and acuminate, with one or more pedunculate flowers in the axil of nearly every leaf. Prof. *Eaton* seems to scout the idea of this being an introduced plant: but from all that I can learn of it, I am of opinion it is not a native. It is a worthless intruder on our cultivated grounds; and generally abundant in the fields of slovenly farmers.

2. V. BLATTARIA, *L.* Stem angled, smoothish; leaves oblong-lanceolate, amplexicaul, dentate serrate, smooth; flowers in a terminal raceme; peduncles 1-flowered, solitary. *Beck, Bot. p.* 259.

Vulgò—Moth Mullein. *Gallicè*—Moléne blattaire.

Root biennial. *Stem* 2 to 4 feet high, often branched above. *Leaves* 2 to 4 or 5 inches long, and an inch to an inch and half wide, coarsely and irregularly dentate-serrate. *Raceme* 6 to 18 inches long, leafy, or bracteate, glandular-pubescent

on every part; *pedicels* half an inch to an inch long. *Calyx-segments* linear-lanceolate. *Corolla* greenish white with a tinge of purple (sometimes bright yellow). *Stamens* unequal; filaments all hairy.

Hab. Pastures, and road sides: frequent. *Fl.* June—July. *Fr.* August.

Obs. The *variety* with *yellow* flowers, though very common near Philadelphia, is comparatively rare in Chester County. It is on the increase, however, and will doubtless soon become common. This species, also, is believed to be introduced. One or two others are enumerated in the U. States.

† † *Fruit a Berry.*

105. LYCIUM. *L. Nutt. Gen.* 147.

[So named from *Lycia*; the native country of one species.]

Calyx short, 2 to 5-cleft. *Corolla* tubular; limb mostly 5-lobed, spreading; throat closed by the beard of the filaments. *Stamens* 4 or 5, exserted. *Berry* 2-celled. *Seeds* several, reniform.

Shrubs: often spinose, with the branches pungently terminated: leaves alternate, sometimes fasciculate: flowers axillary, solitary, or in pairs. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

1. L. BARBARUM, *L.* Subspinose; branches elongated, pendulous; leaves lanceolate, unequal, often clustered; calyx mostly 3-cleft. *Willd. Sp.* 1. *p.* 1059.

BARBAROUS LYCIUM. *Vulgò*—Matrimony vine. Bastard Jasmine.

Root perennial. *Stem* 10 to 15 or 20 feet long, slender, procumbent or nodding if not supported, much branched; branches of a greyish ash color, long, flaccid, pendulous, with subspinose rudiments, or indurated points, at the axils, or base of the leaves. *Leaves* 1 to 3 inches long, and one third of an inch to an inch wide, varying from lanceolate and acute to obovate-lanceolate and obtuse, sometimes linear-oblong, entire, smooth, tapering at base to a petiole about half an inch long. *Peduncles* slender, about an inch long, often 2 or 4 together. *Calyx* about one fourth the length of the corolla, persistent; segments mostly 3 (sometimes 2), ovate, erect. *Corolla* greenish purple; limb 5-lobed. *Stamens* 5; *filaments* bearded near the base, so as to close the throat of the corolla. *Style* as long as the stamens; *stigma* capitate. *Berry* oval, or ovoid, orange red when mature.

Hab. About houses, and gardens: frequent. *Fl.* June—Sept. *Fr.* July—Octo.

Obs. This straggling, limber-branched, half-vine kind of shrub, has been introduced; and is so difficult to destroy, when once established, that it is something of a nuisance, in many places. There is another species in the Southern States.

106. SOLANUM. *L. Nutt. Gen.* 196.

[A name of obscure and uncertain etymology.]

Calyx 5 to 10-parted, persistent. *Corolla* rotate, or subcampanulate; limb plicate, mostly 5-lobed. *Anthers* erect, slightly cohering, or connivent, opening at the top by 2 pores. *Berry* 2 to 6-celled, sub-globose, or depressed and torose. *Seeds* numerous.

Herbaceous, or fruticose: unarmed or aculeate; leaves sometimes in pairs, sometimes pseudo-pinnate with a terminal odd leaflet, sometimes simple; peduncles solitary or several, one or many-flowered, extra-axillary, scattered, or terminal. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

* *Stem and leaves unarmed.*

1. S. DULCAMARA, *L.* Stem fruticose, flexuose; leaves cordate-ovate, the upper ones often auriculate-lobed at base; flowers in lateral cymes. *Beck, Bot. p.* 257.

BITTER-SWEET SOLANUM. *Vulgò*—Bitter-sweet. Woody Night-shade. *Gallicè*—Douce-amère. *Germanicè*—Bitter suess. *Hisp.*—Dulzamára.

Root perennial. *Stem* 6 or 8 feet long, climbing, somewhat pubescent. Lower *leaves* cordate, acuminate, entire; upper ones often subhastate, or with two deeply dissected auriculate lobes at base; all minutely pubescent, and ciliate. *Flowers* in lateral branched nodding cymes; pedicels half an inch long, clavate, articulated to the branches; the common peduncle about 2 inches in length. *Calyx-segments* 5, short, ovate, rather obtuse. *Corolla* violet purple; lobes lanceolate, spreading or reflexed, each with 2 green dots or tubercles at base; tube short. *Anthers* large, yellow, slightly cohering and forming a cone. *Berries* oval, bright red when mature.

Hab. Moist grounds: about houses: Brandywine: not common. *Fl.* July. *Fr.* Sept.

Obs. This foreigner is becoming naturalized about many houses; and has been found in some places along the Brandywine. The berries are narcotic and poisonous when taken into the stomach. An infusion of the root, and branches, is occasionally used, in popular practice, as a diet drink, and remedy for fevers, rheumatism, &c. but with what real efficacy I am not informed.

2. S. NIGRUM, var. *virginicum. L.* Stem herbaceous, branched, angular, scabrous on the angles; leaves ovate, obscurely repand-dentate; flowers subumbellate. *Beck, Bot. p.* 257.

S. nigrum (exasperatum). *Muhl. Catal. p.* 24.

S. nigrum. *Bigel. Bost. p.* 84. *Florul. Cestr. p.* 26. *Eat. Man. p.* 344.

BLACK SOLANUM. *Vulgò*—Night-shade.

Root annual. *Stem* 1 to 2 feet high, much branched, angular or slightly winged, the angles scabrous, or sometimes slightly denticulate. *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, sometimes coarsely repand-toothed, narrowed suddenly at base to a petiole about an inch long. *Umbels* lateral, few-flowered, nodding, remote from the leaves; pedicels one third of an inch long; the common peduncle about an inch in length. *Calyx-segments* 5, oblong-ovate, rather acute. *Corolla* white, minutely pubescent; lobes lance-oblong, acute, spreading, or somewhat reflexed. *Berries* globose, black when mature.

Hab. About dwellings; and among rubbish: frequent. *Fl.* July. *Fr.* Sept.

Obs. This seems to be nearly allied to the *S. nigrum*, of Europe, and Dr. *Torrey* suspects it to have been introduced. I incline very much to be of the same opinion. The plant is possessed of active deleterious properties; and might produce unpleasant consequences, if gathered by mistake among pot-herbs.

3. S. TUBEROSUM, L. *Root producing tubers; stem herbaceous; leaves interruptedly pseudo-pinnate, lobes entire; peduncles subdivided.* Willd. Sp. 1. p. 1033.

TUBEROUS SOLANUM. Vulgò—*Common Potato. Irish Potato.*

Gall. *Pomme de terre.* Germ.—*Die Kartoffel.* Hisp.—*Batatin.*

Root *perennial? producing numerous roundish or oblong tubers.* Stem *2 to 3 feet high, thick, succulent, and angular, often decumbent, somewhat pubescent.* Leaves

interruptedly pinnate,—or rather pinnately dissected, with an odd terminal lobe; the lobes ovate, acuminate, and petiolate, rarely opposite, the alternate pairs very small. Flowers *in terminal and somewhat nodding corymbs, on a common peduncle* 3 *to* 5 *inches long; the partial peduncles slender, half an inch to an inch in length, articulated to the pedicels one fourth to half an inch below the flower.* Calyx *pubescent; segments* 5, *lanceolate.* Corolla *bluish white; lobes lance-ovate, acute, spreading; tube short.* Anthers *yellow, erect, or connivent.* Style *longer than the stamens:* stigma *capitate.* Berries *globose, about half an inch in diameter, yellowish green when mature.* Seeds *numerous.*

Hab. *Gardens, and cultivated fields: very common.* Fl. *June—July.* Fr. *Sept.*

Obs. *This truly valuable plant is cultivated by every owner, or occupant of land. It is one of the indispensable crops, for a family. Long culture has produced numerous* varieties,—*the most esteemed of which, at this time, in this County, produces a large oblong white tuber, with the skin often tinged with purple. It is called the* "Mercer Potato." *The plant is usually propagated, not by means of the* seeds, *but by* cuttings *of the tubers, which contain numerous buds, called* eyes. *We are indebted to* South America *for this most important vegetable. My friend, the late* Dr. Baldwin, *collected* native *specimens of it, near* Montevideo, *on the river* La Plata, *in the year* 1818.

4. S. LYCOPERSICUM, L. *Stem herbaceous; leaves interruptedly pseudo-pinnate, lobes incised-serrate; racemes 2-parted, leafless; fruit depressed-globose, often torose.* Willd. Sp. 1. p. 1033.

Vulgò—*Tomata, or Tomatoes. Love-apple.*

Gall.—*Pomme d' Amour.* Germ.—*Liebes-Apfel.* Hisp.—*Tomáte.*

Root *annual.* Stem 2 *to* 4 *feet high, branching, succulent, weak, and straggling or procumbent unless supported, viscid, fetid, roughish, and glandular-pubescent.* Leaves *interruptedly pseudo-pinnate, with an odd terminal leaflet or lobe; lobes lance-ovate, acuminate, deeply incised-serrate, petiolate.* Flowers *in naked lateral racemose clusters; common peduncle* 1 *to* 2 *inches long, dichotomously divided; with subdivisions articulated to the pedicels of the flowers.* Calyx-segments 5 *to* 10, *linear-lanceolate, long.* Corolla *yellow, pubescent; lobes* 5 *to* 10, *lanceolate, spreading.* Anthers *cohering in a tube, acuminate, with the points recurved.* Berries *large,* (1 *to* 3 *or* 4 *inches in diameter*) *depressed-globose, sometimes remarkably torose, or distorted by large swelling ridges, red, or reddish orange color, when mature.* Seeds *numerous.*

Hab. *Gardens, and lots: frequent.* Fl. *June—Aug.* Fr. *Aug.—Sept.*

Obs. *This is cultivated for its fruit,—which is much esteemed by many persons as a sauce, or condiment; and it is, of late years, coming into very general use.*

* *Stem and leaves aculeate.*

5. S. INSANUM, L. *Stem herbaceous; leaves ovate, somewhat sinuate-lobed, tomentose; peduncles nodding, thickened; calyx aculeate.* Willd. Sp. 1. p. 1037.

INSANE SOLANUM. Vulgò—*Purple Egg-plant. Mad Apple.*

Gallicé—*Aubergine rouge.*

Whole plant clothed with a stellated tomentum. Root *annual.* Stem *about* 2 *feet high, hollow, becoming firm and at length almost ligneous, aculeate.* Leaves 6 *to* 9 *inches long, and* 4 *to* 6 *inches wide, ovate, sinuate and sublobed, densely tomentose, nerves and petioles aculeate;* petioles 1 *to* 3 *inches long.* Peduncles *lateral, solitary, thick (sometimes slender and dichotomous at summit, or bearing* 2 *flow-*

ers, on pedicels about an inch long), nodding, aculeate. Calyx *5 to 7 or 10-parted, aculeate; segments lance-ovate.* Corolla *purplish, pubescent; lobes 5 to 7 or 10, ovate, spreading.* Berries *ovoid-oblong, very large, mostly dark purple when mature, sometimes pale green.*

Hab. *Gardens: not common.* Fl. *July—Aug.* Fr. *Octo.*

Obs. *This is occasionally cultivated, as a culinary vegetable; but is not common,—our summer is scarcely long enough for it. The* S. Melongena,—*which is mostly unarmed, and bears white fruit—(and of which the foregoing is supposed by some to be only a* variety)—*is still less frequently met with.*

6. S. CAROLINENSE, L. Stem suffruticose, annual; leaves ovate-oblong, acute, sinuate-angular and often subhastate, stellate-pubescent; racemes simple, lax. *Beck, Bot. p.* 257. Icon, *Bart. Am.* 1. *tab.* 23.

CAROLINIAN SOLANUM. *Vulgò*—Horse Nettle.

Root perennial. *Stem* from 1 to nearly 2 feet high, annual, but firm and suffruticose, hollow, branched, armed with sharp spreading prickles. *Leaves* 4 to 6 inches long, and 2 to 3 or 4 inches wide, aculeate along the midrib and larger nerves on both sides, clothed with a hirsute stellate pubescence; petioles half an inch to an inch and a half long. *Racemes* lateral, or opposite to and often longer than the leaves; pedicels about half an inch long. *Calyx* aculeate, 5-parted; segments lanceolate, acuminate. *Corolla* bluish white, rather large, externally pubescent; lobes 5, lance-ovate. *Berries* globose, orange yellow when mature.

Hab. Marshallton; West-Chester: not common. *Fl.* July. *Fr.* October.

Obs. This is a vile, pernicious weed; and extremely difficult to subdue, or eradicate. It is believed to have been introduced by the late *Humphrey Marshall*, into his Botanic Garden at Marshallton,—whence it has spread around the neighborhood; and strongly illustrates the necessity of caution, in the introduction of mere Botanical curiosities into good agricultural districts. Four or five additional species are enumerated in the U. States.

107. PHYSALIS. *L. Nutt. Gen.* 198.

[Greek, *Physa*, a bladder, or bag; in allusion to the inflated calyx.]

Calyx 5-cleft, persistent, enlarging and becoming ventricose. *Corolla* campanulate-rotate; limb plicate, somewhat 5-lobed; tube very short. *Berry* 2-celled, globose, enclosed in the pentagonal-ovoid inflated calyx. *Seeds* numerous, compressed, subreniform-orbicular.

Herbaceous, or frutescent; leaves often in pairs; peduncles axillary, or lateral, solitary, or several together. *Nat. Ord.* 213. *Lindl.* SOLANEÆ.

1. P. VISCOSA, *L?* Stem herbaceous, somewhat dichotomously branched, branches spreading, viscid-pubescent; leaves solitary, or in pairs, subcordate-ovate, mostly acute, more or less repand-dentate; flowers solitary, axillary, pendulous. *Beck, Bot. p.* 257.

CLAMMY PHYSALIS. *Vulgò*—Ground Cherry.

Whole plant very pubescent, and more or less viscid. *Root* annual? *Stem* 12 to 18 inches high, branched somewhat dichotomously; branches spreading, often divaricate, and geniculate. *Leaves* 2 to 4 inches long, and 2 to 3 inches wide, varying from lance-ovate, acute, or acuminate, to roundish ovate and obtuse; the base sometimes cordate, sometimes entire and narrowed abruptly to a petiole, often unequal; the margin sometimes nearly entire, but generally repand-dentate (and all these varieties occur on the same plant); petioles 1 to 2 inches long. *Calyx* campanulate, pubescent (sometimes very hairy)—gradually enlarging until it

becomes a veiny 5-angled inflated ovoid sac, about an inch in diameter and an inch and a half long; the segments ovate-lanceolate, at first spreading, finally connivent. *Corolla* greenish yellow, with fuscous or purplish brown spots at base, campanulate, about twice as long as the calyx; limb plicate, repand, obscurely 5-lobed. *Stamens* shorter than the corolla; *filaments* dilated above, or oblanceolate; *anthers* erect. *Style* a little longer than the stamens; *stigma* capitate. *Berry* globose, viscid, enclosed in the inflated calyx, greenish yellow, or sometimes orange, when mature; peduncles of the fruit about an inch long.

Hab. Roadsides; fields, fence-rows, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. This plant is so variable in its minor features, and yet all the varieties so essentially similar, that I am strongly inclined to agree with Dr. *Aikin* (*in Eat. Man. p.* 262,) in the opinion, that one species may properly comprise *all* those which have heretofore been enumerated as P. *viscosa*, P. *pennsylvanica*, P. *philadelphica*, P. *pubescens*, P. *pruinosa*, and P. *obscura*. Any one of them, certainly, might be called by the *last* mentioned name! But they all probably require a more careful examination, and comparison, than they have yet received. The ripe berries of one of the more hairy varieties (P. *pennsylvanica?* of authors), are orange-colored, more succulent than some others, and not unpalatable.

2. P. LANCEOLATA, *Mx.* Stem herbaceous, dichotomously branching, densely pubescent; leaves mostly in pairs, ovate-lanceolate, acuminate, entire, unequal at base; flowers solitary, nodding; calyx villose. *Beck, Bot. p.* 258.

LANCEOLATE PHYSALIS.

Root perennial. *Stem* 1 to 2 feet high, angular, mostly very pubescent. *Leaves* generally in pairs, 3 to 6 inches long, and 1 and a half to 3 inches wide, often remarkably unequal at base, on petioles about one third their length. *Flowers* generally in the upper axils, nodding, on villose peduncles which are finally about an inch long. *Calyx* cleft half way down; segments lanceolate, acuminate. *Corolla* pale greenish yellow, with fuscous spots at base.

Hab. Goshen township; rare. *Fl.* July. *Fr.*

Obs. A specimen of this, which is readily distinguishable from the preceding, was brought to me by Mr. GEO. W. HALL. The leaves are decidedly more lanceolate on our plant, than on one received, by that name, from Mr. *Elliott*: but I have a Kentucky specimen, from Prof. SHORT, which is identical with ours,—except that it is much less pubescent. Four or five other species are enumerated in the U. States, by American Botanists; but I apprehend several of them require to be authenticated.

108. CAPSICUM. *L. Gen. Pl.* 338.

[Greek, *capto*, to bite; from its hot, or biting quality.]

Calyx 5-cleft, erect, persistent. *Corolla* sub-rotate, 5-cleft. *Anthers* connivent. *Berry* without pulp, inflated.

Herbaceous, or suffruticose; leaves often in pairs; peduncles mostly solitary, axillary; seeds acrid and heating. *Nat. Ord.* 213, *Lindl.* SOLANEÆ.

1. C. ANNUUM, L. *Stem herbaceous; peduncles axillary.* Willd. Sp. 1. p. 1050.

ANNUAL CAPSICUM. Vulgò—*Red Pepper. Cayenne Pepper.* Gall.–*Poivre d'Inde.* Germ.–*Spanischer Pfeffer.* Hisp.–*El Pimentéro.*

Root *annual*. Stem 1 *to* 2 *feet high, branching above, angular, somewhat pilose* Leaves 2 *to* 4 *inches long, and* 1 *to* 2 *inches wide, ovate, acuminate, entire, glabrous, deep green;* petioles 1 *to* 3 *inches long, semi-terete, slightly channelled on the upper side.* Calyx *angular, with short segments.* Corolla *white, with ovate-oblong spreading lobes.* Stamens *shorter than the corolla*; anthers *white, with a tinge of blue.* Style *cylindric, thick, longer than the stamens*; stigma *obtuse.* Berry *hollow, ovoid-oblong, or depressed-globose, angular, or torose, red when mature.* Seeds *numerous, compressed, subreniform, affixed to a central receptacle.*

Hab. *Gardens, &c. frequent.* Fl. *July—Aug.* Fr. *Sept.—Octo.*

Obs. *Cultivated for the fruit,—which is a powerful stimulus, and much used as a condiment. Several varieties, (and perhaps distinct species)—with fruit of various forms,—are to be met with in the gardens. It is necessary to plant the seeds very early, in a hot-bed, in order to obtain a crop in this climate. There are no native species in the U. States.*

b. *Corolla mostly pentapetalous.* † *Fruit a Capsule.*

109. CLAYTONIA. *L. Nutt. Gen.* 226.

[In honor of *John Clayton*; one of the early explorers of Virginian Plants.]

Calyx of 2 oblong-ovate persistent sepals. *Petals* obovate-oblong, unguiculate. *Stamens* inserted on the claws of the petals. *Ovary* sessile. *Stigma* 3-cleft. *Capsule* 1-celled, 3-valved, 3 to 5-seeded. *Seeds* roundish-reniform, compressed.

Herbaceous, and somewhat succulent: root mostly tuberous and perennial; leaves radical; scape bearing a single pair of opposite entire leaves, and a terminal raceme of flowers. *Nat. Ord.* 144. *Lindl.* PORTULACEÆ.

1. C. VIRGINICA, *L.* Leaves mostly 2, linear-lanceolate; raceme simple, loose, nodding; pedicels elongated. *Beck, Bot. p.* 131. VIRGINIAN CLAYTONIA.

Root perennial, tuberous and fleshy, usually deep in the ground. *Scape* 6 to 10 inches long, simple, glabrous, weak, erect or subprocumbent. Radical *leaves* petiolate (often wanting?); those on the scape 3 to 5 inches long, and one fourth to half an inch wide, thickish and succulent, at first sublinear, finally narrow-lanceolate, rather acute, tapering at base and often subconnate. *Flowers* usually 6 to 12 or 15, in a loose simple raceme; *pedicels* half an inch to an inch and half long, gradually shorter above, the lowest one mostly bracteate at base (sometimes nearly all of them have small bracts). *Sepals* rather obtuse, one partially embracing the other at base, both a little recurved at apex after flowering. *Corolla* pale red with purple veins, nearly three times as long as the calyx. *Stamens* shorter than the petals; *filaments* dilated below. *Capsule* roundish ovoid. *Seeds* often 5, compressed, or lenticular, with an acute notch at base, black, shining, rugosely striate, under a lens.

Hab. Moist low grounds: common. *Fl.* April—May. *Fr.* June.

Obs. There are 2 or 3 *varieties* of this, and perhaps one or two additional species in the U. States. I have never met with any of the varieties, in this County, except that with linear-lanceolate leaves,—which is every where common.

110. IMPATIENS. *L. Nutt. Gen.* 224.

[Latin; metaphorical, alluding to the *impatience* of the seed-vessels, to the touch.]

Calyx of 5 irregular deciduous sepals; the two outer lateral ones roundish-ovate, small; the inner ones petaloid; the two upper ones connate; the lower one cucullate and spurred. *Corolla* of 4 petals, united in

pairs, apparently forming one unequally bilobed petal on each side. *Anthers* cohering. *Capsule* prismatic-terete, elongated, glabrous, with 5-cells, and 5 elastic dissilient valves. *Seeds* numerous, suspended, elliptic, acuminate, compressed.

Herbaceous: glabrous; stem succulent, tender, and subpellucid, with tumid joints; leaves simple, penninerved, alternate, without stipules; peduncles axillary. *Nat. Ord.* 126. *Lindl.* BALSAMINEÆ.

1. I. PALLIDA, *Nutt.* Leaves oblong-ovate, rather acute; peduncles 2 to 5-flowered, longish; the cucullate sepal dilated, obtusely conic, with a short recurved spur; flowers palish yellow and sparingly maculate. *Beck, Bot. p.* 68.

I. noli-tangere. *Willd.? Sp.* 1. *p.* 1176. *Pers.? Syn.* 1. *p.* 257. *Muhl? Catal. p.* 26. *Pursh, Am.* 1. *p.* 171. *Ell. Sk.* 1. *p.* 303. Var. *a. Mx. Am.* 2. *p.* 149.

Also, I. aurea. *Muhl. Catal. p.* 26.

PALE IMPATIENS. *Vulgò*—Snap-weed. Touch-me-not.

Plant of an uniform green. *Root* annual. *Stem* 3 to 5 feet high, much branched. *Leaves* 2 to 5 or 6 inches long, and 1 to 3 or 4 inches wide, obtusely and coarsely crenate-serrate, serratures mucronulate, the base fringed with a few short filiform teeth; *petioles* varying in length from one eighth of an inch to 3 inches,—the young upper leaves being nearly sessile. *Peduncles* 1 to 3 inches long, slender, 2 to 5-flowered; pedicels about an inch long, with a small lanceolate *bract* near the middle. *Outer sepals* one fourth of an inch long, roundish ovate, pale green, veined, with a midrib terminating in a short oblique callous point; the *two inner and upper sepals* yellow, resembling petals, united into *one* by a suture, a little divided or emarginate at apex; the *lower sepal* yellow, with a few reddish brown spots, distended into a conic nectary, wider than long, with a recurved spur about one fourth of an inch in length. *Petals* yellow, sparingly spotted, 2 on each side, unequal, completely united at base, the upper one much shorter and resembling a lateral lobe of the lower one. *Capsule* an inch or more in length; the valves, at maturity, springing with great elasticity, and scattering the seeds in all directions.

Hab. Moist, shaded grounds: frequent. *Fl.* July—Sept. *Fr.* Aug.—Octo.

Obs. This species is frequently to be met with along shaded rivulets, and low grounds; but is not so common as the following. It has a greener aspect, and is of a larger growth. It may, moreover, be readily distinguished by its flowers, which are of a gamboge yellow, and not much spotted.

2. I. FULVA, *Nutt.* Leaves somewhat rhombic-ovate, rather obtuse; peduncles 2 to 3 or 4-flowered; the cucullate sepal acutely conic, with a longish recurved spur; flowers deep orange-color, with numerous reddish brown spots. *Beck, Bot. p.* 69.

I. biflora. *Willd. Sp.* 1. *p.* 1175. *Pers. Syn.* 1. *p.* 257. *Pursh, Am.* 1. *p.* 171. *Ell. Sk.* 1. *p.* 304. *Lindl. Ency. p.* 184.

I. noli-tangere, *var. b. Mx. Am.* 2. *p.* 149. *Bigel. Bost. p.* 93.

I. maculata. *Muhl. Catal. p.* 26.

FULVOUS, OR TAWNY IMPATIENS. *Vulgò*—Snap-weed. Touch-me-not.

Root annual. *Stem* 2 to 4 feet high, much branched, somewhat tawny. *Leaves* 1 to 3 or 4 inches long, and half an inch to 2 inches wide, somewhat glaucous, with fulvous midrib, and nerves. *Peduncles* about an inch long, usually 2 or 3 flowered; pedicels half an inch to an inch in length, with a subulate *bract* near the middle. *Outer sepals* frequently tawny; the cucullate sepal conic, longer than wide, rather acute, with a recurved spur about half an inch long.

Hab. Moist, shaded grounds: common. *Fl.* July—Sept. *Fr.* Aug.—Oct.

Obs. This is certainly nearly allied to the preceding; but the distinctions above noted appear to be very constant. The tender succulent stems are often used, in popular practice, as an application to inflamed tumors,—being bruised and applied as a refrigerant cataplasm. These are the only native species in the U. States. The I. *Balsamina, L.* (now called *Balsamina hortensis,—Vulgò*—Lady's Slippers—) is to be found, almost naturalized, in every flower garden.

111. VIOLA. *L. Nutt. Gen.* 225.

[A name of obscure derivation.]

Calyx persistent; *sepals* 5, produced downward at base into an auriculate appendage. *Corolla* irregular; *petals* 5, unequal; the lower one obtusely spurred at base. *Anthers* connivent and slightly cohering; the two lower ones with processes at their back, which extend into the spur of the corolla; *filaments* dilated, extending beyond the anthers. *Capsule* 1-celled, 3-valved, opening elastically.

Herbaceous perennials: often stemless (or the stem short, subterraneous, and root-like): leaves alternate, stipular; peduncles radical, or axillary, bibracteate, 1-flowered, reflexed at apex; flowers nodding. *Nut. Ord.* 130. *Lindl.* VIOLACEÆ.

† *Stemless, or nearly so: Stipules radical.*

* *Flowers blue.*

1. V. PEDATA, *L.* Leaves pedate, 7 to 9-parted, nearly smooth; segments oblanceolate, entire, or somewhat 3-lobed at apex; petals all beardless; stigma large, obliquely truncate, perforate at apex. *Beck, Bot. p.* 38.

Also, V. digitata. *Pursh, Am.* 1. *p.* 171.

PEDATE VIOLA. *Vulgò*—Violet.

Leaves exactly pedate; segments oblanceolate, obtuse or acute, one or two-toothed, or somewhat 3-lobed, at apex, often lanceolate and entire, minutely ciliate-serrulate, punctate. *Stipules* radical, linear-lanceolate, acuminate, membranaceous, conspicuously lacerate-ciliate. *Scapes* numerous, 3 to 6 or 8 inches high, finally a little longer than the leaves, angular, smooth; *bracts* near the base, opposite, linear, very long and narrow. *Sepals* linear-lanceolate, acute, truncate at base. *Corolla* large, pale blue, sometimes variegated (rarely all white); petals rounded at the extremity, entire. *Stigma* compressed, angular, projecting a little above the stamens. *Capsule* oblong, subtriangular, smooth.

Hab. Dry hills; on the Mica-slate, abundant. *Fl.* April—May. *Fr.* June.

Obs. This handsome species presents two or three *varieties*,—one with variegated flowers, the upper petals of a rich deep-violet purple, and velvety appearance,—fully as beautiful, I think, as the V. *tricolor*, of the gardens. For a full and interesting description of our American Violets, See *Schweinitz, in Sill. Journ. Vol.* 5. *p.* 48. and *Le Conte, in Annals of N. Y. Lyceum, Vol.* 2. *p.* 135.

2. V. PALMATA, *L.* Leaves more or less pubescent, somewhat cordate, palmate or hastate-lobed (rarely entire); lobes polymorphous, crenate or dentate, the middle one always largest; lateral petals bearded; stigma capitate, depressed, margined, a little recurved and rostrate. *Beck, Bot. p.* 38.

Also ? V. asarifolia. *Florul. Cestr. p.* 29. Not of *Pursh.*

PALMATE VIOLA.

Primary leaves somewhat reniform-cordate, often undivided, always more or less pubescent, sometimes quite villose; *secondary leaves* very variously divided, more or less palmate, or cordate and incisely lobed, sometimes hastate-lobed; petioles slightly margined, generally villose. *Stipules* lanceolate, sub ciliate. *Scapes* several, 4 to 6 inches long, often pilose below, finally shorter than the leaves, with 2 small lanceolate *bracts* rather below the middle. *Sepals* ovate-lanceolate, ciliate near the base; petals obovate, entire. *Capsule* smooth.

Hab. Moist woodlands, and low grounds: frequent. *Fl.* May. *Fr.* June.

Obs. This species is remarkable for the countless variety in the form and divisions of the leaves. I have some specimens which resemble this, in general habit,—except that none of the leaves are lobed, but all cordate, or reniform-cordate, acute (or rarely orbicular), and regularly crenate-serrate. Mr. *Schweinitz* pronounced them to be his V. *asarifolia;* and they are given by that name, in my Catalogue: But I strongly suspect they belong either to V. *palmata*, or to the *following*, which Mr. *Le Conte* says is sometimes villose.

3. V. CUCULLATA, *Ait.* Glabrous; leaves cordate, mostly acute, or subacuminate, cucullate at base, crenate-serrate; lateral petals bearded; stigma triangular, marginate. *Beck, Bot. p.* 38.
Also ? V. obliqua. *of Authors.*
Also ? V. papilionacea. *Pursh, Am.* 1. *p.* 173. *DC. Prodr.* 1. *p.* 292.
Also ? V. sororia. *Pursh, Am.* 1. *p.* 173. Not of *Willd. & Le Conte.*
Also ? V. affinis. *Le Conte, in Ann. Lyc. N. Y.* 2. *p.* 138.

CUCULLATE, OR HOODED VIOLA.

Leaves cordate, acute, or somewhat acuminate, mostly cucullate by the curling in of the angles at base, sometimes reniform, and orbicular; petioles margined, smooth (sometimes pubescent?). *Stipules* linear-lanceolate, ciliate-dentate. *Scapes* several, 6 to 12 inches long, often longer than the leaves, (especially in what has been called V. *obliqua*); *bracts* minute, subulate, sub-opposite, mostly above the middle, often near the flower. *Sepals* linear-lanceolate, acute, scarious and minutely ciliate on the margin. *Corolla* blue, varying from purplish to deep violet,—sometimes motly, or variegated; petals obovate, (the lower one sometimes bearded?) the beards on the lateral ones clavate. *Spur* short, rounded. *Capsule* smooth.

Hab. Moist low grounds; and along rivulets: frequent. *Fl.* April—May. *Fr.* June.

Obs. This plant puts on different appearances, and may, perhaps, afford constant *varieties:* but I cannot help thinking that a number of the species, in the books, may be safely referred to it.

4. V. SAGITTATA, *Ait.* Leaves lance-oblong, rather acute, cordate-sagittate, often somewhat hastate, incised and coarsely toothed at base, crenate-dentate, mostly pubescent; the lower and lateral petals densely bearded, the two upper ones nearly naked; stigma depressed, margined, rostrate. *Beck, Bot. p.* 38.
Also ? V. dentata. *Pursh, Am.* 1. *p.* 172.
Also ? V. emarginata. *Le Conte, Ann. Lyc. N. Y.* 2. *p.* 142.

SAGITTATE, OR ARROW-LEAVED VIOLA.

Leaves varying from oblong, and sagittate with a small hastate auricle, to cordate and somewhat triangular-hastate, acute or obtuse, crenate or nearly entire, smoothish, or often roughly pubescent, on margined petioles. *Stipules* lance-linear. *Scapes* several, 2 to 5 or 6 inches long, generally a little longer than the leaves,

with subulate sub-opposite or alternate *bracts* near the middle. *Sepals* lanceolate, smoothish. *Corolla* pale purplish blue; petals obovate-oblong, the upper ones nearly naked, the lateral ones and the lower, or spurred one, bearded. *Stigma* with a horizontal beak. *Capsule* smooth.

Hab. Dry hills: Mica-slate, & Serpentine rock: frequent. *Fl.* April-May. *Fr.* June.

Obs. There appears to be 2 or 3 pretty distinct *varieties* of this. The most common one has the leaves 1 to 2 inches long, and half an inch to three quarters wide, rather acute, sagittate and toothed or minutely hastate at base, generally pubescent, and often roughly so, on petioles about as long as the leaves. Another variety is smoother, with the leaves more cordate, rather obtuse, crenate-dentate, on petioles more than twice as long as the leaves. A third variety, (var. *emarginata*, *Nutt.*) is much larger, more or less pubescent, with leaves 2 to 3 inches long, and 1 to 2 inches wide, almost triangular-hastate, the lobes at base coarsely toothed or lacerate, on petioles finally 4 times as long as the leaves, and nearly twice as long as the scapes. This last is certainly a striking variety; and Mr. *Le Conte* contends it is a good species.

5. V. OVATA, *Nutt.* Leaves ovate, crenate, ciliate, abruptly decurrent on the short petiole, mostly roughish pubescent; lateral petals densely bearded, lower one slightly bearded, upper ones naked; stigma margined, somewhat rostrate. *Beck, Bot. p.* 39.
V. ciliata. *Muhl. Catal. p.* 26.
V. primulifolia. *Pursh, Am.* 1. *p.* 173. *Lindl. Ency. p.* 186. Not of *Willd. and others.*
OVATE VIOLA.

Leaves numerous, about an inch long, and three fourths of an inch wide, rather acute, sometimes obtuse, generally very pubescent, rarely smoothish; petiole margined, scarcely as long as the leaf. *Stipules* ovate-lanceolate, acuminate, ciliate. *Scapes* several, mostly a little longer than the leaves, pilose, with sub-opposite lance-linear *bracts* near the middle. *Sepals* oblong-lanceolate, smoothish, often ciliate. *Corolla* blue; petals obovate, entire, paler at base, the lateral ones with a white beard. *Capsule* smooth.

Hab. Dry hills; Mica-slate range: frequent. *Fl.* April—May. *Fr.* June.

Obs. This species, used in decoction, is one of the many *Newspaper remedies* for the bite of the *Rattlesnake*; and also for Dysentery, Strangury, &c. It is mucilaginous; but I am unacquainted with its virtues.

6. V. SORORIA, *Willd.* Leaves orbicular, or roundish cordate, with the sinus often closed, crenate-serrate, mostly pilose, thickish, purple beneath, flat, lying on the ground; lateral petals densely bearded, lower petal somewhat bearded, upper ones naked; stigma depressed, with a deflexed beak. *Le Conte, Ann. N. Y. Lyc.* 2. *p.* 142.
V. barbata. *Muhl. Catal. p.* 26.
V. villosa, *var.* cordifolia. *Nutt. Gen.* 1. *p.* 148. *Bart. Phil.* 1. *p.* 122. *Torr. Fl.* 1. *p.* 252. *Ejusd. Comp. p.* 117. *Beck, Bot. p.* 39.
V. cordifolia. *Schw. in Sill. Journ.* 5. *p.* 62. *DC. Prodr.* 1. *p.* 295.
SISTER, OR KINDRED VIOLA.

Leaves 1 to 2 inches long, mostly orbicular and subreniform, sometimes cordate and rather acute, sprinkled with rigid hairs, especially on the upper surface, sometimes nearly smooth, and occasionally the young ones quite villose beneath; petiole about twice as long as the leaf, somewhat margined. *Stipules* small, lanceolate. *Scapes* few, about as long as the leaves, smooth, with small subulate

opposite *bracts* below the middle. *Sepals* lance-oblong, rather obtuse. *Corolla* reddish blue; petals obovate, entire. *Capsule* smooth.

Hab. Dry, hilly, open woodlands: frequent. *Fl.* April—May. *Fr.* June.

Obs. Mr. *Le Conte*,—who ought to know the V. *villosa*, of *Walter*,—asserts that this is quite distinct. I have therefore followed him, in adopting *Willdenow's* name. I had not distinguished it from the others, when my Catalogue was published.

* * *Flowers white.*

7. V. PRIMULÆFOLIA, *L.* Leaves oblong-ovate, mostly acute, subcordate and a little unequal at base, decurrent on the petiole, crenate-serrate, glabrous above, the nerves beneath and petiole pilose; lateral petals slightly bearded; the others naked, the lower one distinctly striate; stigma small, capitate, somewhat rostrate. *Beck, Bot. p.* 39. Not of *Pursh.*

V. acuta? *Bigel. Bost. p.* 95. Also? *Beck, Bot. p.* 39.

PRIMROSE-LEAVED VIOLA.

Leaves 2 to 4 inches long, and 1 to 3 inches wide, more or less ovate, generally acute, sometimes obtuse, rather thin and membranaceous, penninerved; petioles 3 to 6 or 8 inches long, margined, dilated into wings at the base of the leaf. *Stipules* lance-linear, sub-ciliate. *Scapes* few, slender, often pubescent, rather shorter than the leaves, with 2 opposite (or sometimes alternate) subulate-linear *bracts* about the middle. *Sepals* lanceolate, acute. *Corolla* small, white, with dark purple veins or stripes, especially on the lower petal. *Capsule* smooth.

Hab. Moist low grounds; along rivulets: frequent. *Fl.* May. *Fr.* June.

Obs. Prof. *Hooker*, and other distinguished Botanists, are disposed to consider this identical with V. *lanceolata*. It is certainly nearly allied to it: but the V. *lanceolata*, as I have been accustomed to see it in New Jersey, and on Pokono Mountain in this State, appears quite distinct,—with its narrow lanceolate erect leaves, larger flowers, and scapes longer than the leaves. To my view, our plant approaches more nearly, in habit, to V. *blanda*. They are all, however, so polymorphous as to baffle any definite or satisfactory description.

8. V. BLANDA, *Willd.* Leaves broad-cordate and acute, or roundish-reniform, rather remotely and obscurely crenate-serrate, membranaceous, mostly glabrous, the petiole slightly winged, smooth; the lateral petals slightly bearded and striate, the lower one distinctly striate and somewhat bearded; stigma depressed, rostrate. *Beck, Bot. p.* 40.

BLAND VIOLA.

Leaves half an inch to 2 or 2 and a half inches long, and 1 to 2 inches wide, yellowish green, flat and nearly procumbent, cordate, with the sinus rounded, sometimes reniform, and orbicular, and decurrent on the petiole, generally glabrous beneath, often sprinkled with a few short hairs on the upper surface; petiole 1 to 4 inches long, with a narrow margin. *Stipules* lance-linear, sparingly laciniate-dentate. *Scapes* few, mostly longer than the leaves, smooth, with 2 sub-opposite subulate *bracts* near the middle. *Sepals* lance-oblong, rather obtuse (sometimes acute). *Corolla* small, odorous, white; the lower petal with dark purple stripes. *Capsule* smooth. *Seeds* oblong, rugosely striate.

Hab. Wet, low grounds; margins of rivulets: frequent. *Fl.* April-May. *Fr.* June.

Obs. This is a fragrant, delicate little species,—deserving the eulogy of *Shakspeare*,—who in his *Winter's Tale* (*Act* 4. *Sc.* 3.) speaks of

"*Violets*, dim,
But sweeter than the lids of Juno's eyes,
Or Cytherea's breath."

†† *With evident Stems: Stipules axillary.*

* *Flowers blue.*

9. V. MUHLENBERGIANA, *Ging.* Stems weak, decumbent; leaves reniform-cordate, crenate-serrate, nearly smooth, the upper ones a little acuminate, on short petioles; stipules oblong-lanceolate, acuminate, ciliate-serrate, the lower ones laciniate-dentate; spur elongated, straight. *Beck, Bot. p.* 40.

V. asarifolia. *Muhl. Catal. p.* 26. Not of *Pursh, DC. Ell. Le Conte.*

V. debilis. *Pursh, Am.* 1. *p.* 174. *Nutt. Gen.* 1. *p.* 150. *Bart. Phil.* 1. *p.* 124. *Schw. in Sill. Journ.* 5. *p.* 71. *Bigel. Bost. p.* 97. *Florul. Cestr. p.* 30. Also? *DC. Prodr.* 1. *p.* 298. Not? of *Mx. Pers.* nor *Lindl. Ency.*

V. striata? *Ell. Sk.* 1. *p.* 301. Not of *Ait. Willd. Nutt. Le Conte, &c.*

V. Muhlenbergii. *Torr. Fl.* 1. *p.* 256. *Ejusd. Comp. p.* 118.

Also, V. uliginosa. *Muhl. l. c. Schw? l. c. p.* 72. Not of *DC.*

Also? V. punctata. *Schw. l. c. p.* 67.

MUHLENBERG'S VIOLA.

Stem 2 to 8 or 10 inches long, often much branched from the base, smooth, at first nearly erect, finally decumbent, assurgent, straggling, and often nearly prostrate. *Leaves* about an inch in length, and wider than long, reniform-cordate, the lower ones rounded, the upper ones with a short acumination, smooth, or sprinkled with a few short hairs, sometimes ferruginous-punctate; *petioles* one fourth of an inch to an inch long, the radical ones sometimes 2 or 3 inches long. *Stipules* at the axils of the leaves (also at and near the base of the stems), the upper ones laciniate-serrate at base, the lower ones lacerately ciliate. *Peduncles* axillary, longer than the leaves, with 2 sub-opposite lance-linear *bracts* above the middle. *Corolla* middle-sized, pale purplish blue, veined; lateral petals bearded, the lower one mostly with a straight and rather tapering spur about one third the length of the corolla. *Stigma* tubular, papillose, oblique. *Capsule* smooth, a little longer than the sepals.

Hab. Low, swampy grounds; moist woodlands: frequent. *Fl.* May–June. *Fr.* July.

Obs. I have collected small specimens, apparently of this species, with both flowers and mature capsules, in the month of September. The leaves and capsules were covered and roughish with numerous small ferruginous dots, or short lines. The V. *canina*, of Europe, is nearly allied to our plant,—as also, in habit, is the V. *rostrata*, of this country.

* * *Flowers white.*

10. V. OCHROLEUCA, *Schw.* Stems somewhat erect, cespitose, glabrous; leaves cordate, more or less acuminate, crenate-serrate, on longish petioles; stipules oblong or ovate-lanceolate, acuminate, laciniate-serrate, ciliate; spur slightly curved at apex. *Beck, Bot. p.* 40.

V. striata. *Willd? Sp.* 1. *p.* 1166. *Pers? Syn.* 1. *p.* 255. *Ait? Kew.* 2. *p.* 47. *Muhl? Catal. p.* 26. *Pursh, Am.* 1. *p* 174. *Nutt. Gen.* 1. *p.* 150. *Bart. Phil.* 1. *p.* 123. *Le Conte, in Ann. Lyc. N. Y.* 2. *p.* 149. *Lindl? Ency. p.* 186. *Eat. Man. p.* 393. Also? *DC. Prodr.* 1. *p.* 297. Not? of *Schw.*

V. debilis. *Mx? Am.* 2. *p.* 250. Also? *Lindl. Ency. p.* 186. Not of *Pursh, Nutt.* &c.

Also? V. repens. *Schw. l. c. p.* 70.

OCHROLEUCOUS, OR YELLOWISH-WHITE VIOLA.

Stem 5 to 10 or 12 inches high, nearly erect, or a little curved at base, often growing in cespitose bunches. *Leaves* 1 to 2 inches long, and an inch to an inch and a half wide, mostly cordate and acuminate, often hairy along the nerves beneath, the lower ones sometimes roundish cordate; *petioles* 1 to 2 inches long. *Stipules* large, fringed with longish unequal acuminate teeth, which are themselves ciliate. *Peduncles* axillary, often more than twice as long as the leaves, with two long subulate-linear ciliate opposite or alternate *bracts* above the middle. *Corolla* large, yellowish white, or cream-color; the lateral petals densely bearded, the others naked (often the lowest one conspicuously bearded, *Torr.*), the lower one striate with dark purple. *Stigma* oblique, subpubescent. *Capsule* smooth.

Hab. Along Brandywine, near Wistar's Bridge: not common. *Fl.* May. *Fr.* July.

Obs. This species occurs plentifully along the Brandywine, on the flats below Wistar's Bridge,—also along French Creek, about 2 miles N. E. from Kimberton; and perhaps in other localities.

* * * *Flowers yellow.*

11. V. PUBESCENS, *Ait.* Mostly villose-pubescent; stem erect, elongated, leafy at the summit only; leaves broad-ovate, and cordate, more or less acuminate, coarsely serrate-dentate; stipules lance-ovate, subdentate; spur very short. *Beck, Bot. p.* 41.

V. Pennsylvanica. *Mx. Am.* 2. *p.* 149.

Also ? V. eriocarpa. *Schw. in Sill. Jour.* 5. *p.* 75. *DC. Prodr.* 1. *p.* 301.

Also ? V. scabriuscula. *Florul. Cestr. p.* 30.

PUBESCENT VIOLA.

Stem 6 to 12 inches high, generally solitary, somewhat angular, more or less pilose, mostly leafless below the summit, but with 1 or 2 lance-oblong amplexicaul stipules near the base. *Leaves* 2 to 4 inches in length, and as wide as long, ovate, or cordate, sometimes nearly triangular, and abruptly decurrent on the petiole, generally 3 at or near the summit of the stem, and occasionally 1 or 2 below, or at the root; *petioles* of the upper leaves half an inch to an inch long, those below 3 to 5 inches long. *Peduncles* 2 or 3, rather shorter than the leaves, with 2 small *bracts* near the middle, or below it. *Sepals* linear-lanceolate, ciliate. *Corolla* yellow; the lateral petals slightly bearded, and, with the lower one, striate with dark purple; spur short and somewhat gibbous. *Stigma* capitate, pubescent. *Capsule* densely villose, or sometimes smooth. *Seeds* obovoid, rather large, smooth & white.

Hab. Dry, open woodlands: common. *Fl.* May. *Fr.* July.

Obs. We have growing in moist woodlands, particularly along the Brandywine, the V. *scabriuscula*, or *eriocarpa*, of *Schweinitz*,—which is generally considered as nothing more than a *variety* of V. *pubescens* (viz. var. *eriocarpa*, *Nutt.*); but which our Chester County Botanists concur in thinking a pretty good species,—and Mr. *Schweinitz* himself was of the same opinion. It is generally branching from the root, with straggling decumbent stems, which are angular, and nearly smooth, or with 1 or 2 hairy lines; leafy at the root; the leaves smaller, more reniform-cordate, somewhat scabrous and ciliate, but not villose; the capsule is sometimes quite naked, often densely villose. It is certainly nearly allied to V. *pubescens*; but the distinctions here noted are very constant, and present a striking *variety*, if not a legitimate species.—The foregoing are all the well established species of Viola which have yet been found in Chester County. Mr. *Schweinitz* enumerates 29 species in the U. States,—exclusive of V. *concolor*, *L.* which is now separated from the genus. Mr. *Le Conte*, who wrote since, gives but 27 species. The V. *concolor*, *L.* (now called *Solea concolor*,) has not yet been detected within the limits of this County; but it probably will be,—as it has been found near the borders, in Delaware County, along Chester Creek.

112. CEANOTHUS. *L.* *Nutt. Gen.* 229.

[An ancient Greek name; applied to this genus.]

Calyx 5-angled, 5-cleft, campanulate, circumscissed after flowering; the base turbinate, persistent, supporting and somewhat adhering to the fruit. *Petals* small, incurved, saccate or cucullate, compressed, with long slender claws. *Style* mostly trifid. *Capsule* obtusely trigonous, somewhat 3-lobed, 3-celled, 3-seeded, opening on the inner side.

Frutescent: unarmed; leaves alternate; flowers thyrsoid, in cymose fascicles, terminal and axillary. *Nat. Ord.* 96. *Lindl.* RHAMNEÆ.

1. C. AMERICANUS, *L.* Leaves oblong-ovate, acuminate, serrate, triply nerved, pubescent beneath; common peduncles axillary, elongated, mostly leafless. *Beck, Bot. p.* 74.

AMERICAN CEANOTHUS. *Vulgò*—New Jersey Tea. Red-root.

Root perennial, large, dark red. *Stem* 2 to 3 or 4 feet high, shrubby, branched; branches terete, pubescent. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, sometimes unequal, or slightly cordate at base, upper surface nearly smooth, nerves quite hairy beneath, and more or less ferruginous; petioles one fourth to half an inch long, pubescent. *Flowers* numerous, small, in an oblong terminal thyrsus; pedicels fasciculate, one third to half an inch long, subclavate, colored. *Calyx-segments* short, broad, acute, white, deciduous. *Petals* white; the border incurved nearly at right angles, and forming a sac or hood, on a filiform claw. *Stamens* inserted on the rim of the persistent base of the calyx. *Style* mostly trifid, sometimes 2 or 4-cleft.—(Styles 2 to 3, united to the middle, *DC.*). *Capsule* tricoccous, or resembling a dry 3-lobed berry. *Seeds* 1 in each cell, large, oval, greenish ash-color, smooth and shining, externally convex, the inner surface with two cavities divided by a ridge, or keel.

Hab. Woodlands, and borders of thickets: common. *Fl.* June—July. *Fr.* Sept.

Obs. This little shrub possesses considerable astringency; and may, doubtless, answer an useful purpose, where medicines of that character are indicated. The root is said to afford a cinnamon colored dye. The *leaves* were used by the Whigs, as a substitute for *Tea*, during the American Revolution: and, although the sensible properties of the green plant do not promise a very palatable beverage, I am assured by my friend Mr JOSHUA HOOPES, that the leaves, when duly prepared, are quite equal to common *Bohea*. Four or five additional species are enumerated in the U. States.

113. CELASTRUS. *L.* *Nutt. Gen.* 231.

[A name borrowed from the ancient Greek writers.]

DIOICOUSLY POLYGAMOUS: *Calyx* 5-parted, persistent. *Petals* small, unguiculate. *Ovary* immersed in the disk, striate with 10 lines. *Stigma* obtuse, emarginate, or 2 or 3 cleft. *Capsule* 2 or 3-valved; valves coriaceous, septiferous in the middle. *Seeds* 2 or 3, covered with a pulpy 4-cleft colored *arillus*.

Shrubs: climbing, or erect; unarmed, or spinose; leaves alternate, minutely stipular; peduncles terminal, or axillary, paniculately racemose, or solitary. *Nat. Ord.* 93. *Lindl.* CELASTRINEÆ.

1. C. SCANDENS, *L.* Stem climbing, unarmed; leaves oval, or obovate, acuminate, serrate; racemes terminal. *Beck, Bot. p.* 72.

CLIMBING CELASTRUS. *Vulgò*—Climbing Staff-tree. Wax-work.

Stem woody, twining, often climbing to the height or distance of 10 to 15 feet. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 and an half inches wide, oval, or obovate, abruptly acuminate, glabrous, with incurved mucronulate or subglandular serratures, often unequal at base, and somewhat decurrent, on petioles about 3 fourths of an inch long. *Stipules* very minute, setaceously 3 to 5-parted. *Racemes* terminating the branches, few-flowered; *pedicels* articulated, with minute setaceous *bracts* at base. *Calyx* subcampanulate, 10-nerved, yellowish green; segments lance-oblong, scarious on the margin, crenulate, spreading under the fruit. *Petals* greenish yellow, obovate-oblong, obtuse, broadly unguiculate. *Style* short, thick, persistent, finally divided with the valves of the capsule. *Capsule* roundish ovoid, one fourth to third of an inch in diameter, greenish orange-color when mature; valves 2 or 3, each with a ridge, or imperfect septum, in the middle. *Seeds* elliptic, with a ridge on one side, reddish brown, coated by a pulpy purple *arillus* open at the top.

Hab. Woodlands, and fence-rows: frequent. *Fl.* June. *Fr.* Sept.

Obs. The flowers of this climbing shrub are generally *dioicous*, by abortion. Two other species are given by *Willd.* and *Muhl.* as natives of the U. States; but their existence is extremely doubtful.

114. EUONYMUS. *L. Nutt. Gen.* 230.

[Greek, literally *good name*; the reason of which is somewhat obscure.]

Calyx 4 or 5-cleft, flat, the base covered with a peltate disk. *Petals* 4 or 5, spreading, inserted on the margin of the disk. *Stamens* 4 or 5, alternate with the petals. *Capsule* 3 to 5-angled, 3 to 5-celled, 3 to 5-valved; cells 1 or 2-seeded; valves septiferous in the middle. *Seeds* coated with a fleshy, colored *arillus*.

Shrubs: branches often quadrangular; leaves mostly opposite, scarcely stipular; peduncles axillary, often trichotomously branched. *Nat. Ord.* 93. *Lindl.* CELASTRINEÆ.

1. E. ATROPURPUREUS, *Jacq.* Branches smooth; leaves petiolate, elliptic-ovate, acuminate, serrate; peduncles divaricately branched, many-flowered; flowers 4-parted, tetrandrous; capsules sulcate-angled, smooth. *Beck, Bot. p.* 72.

E. carolinensis. *Marsh. Arbust. p.* 43. Also? E. latifolius. *Ejusd. p.* 44.

DARK-PURPLE EUONYMUS. *Vulgò*—Burning Bush. Spindle tree.

Stem 6 to 8 or 10 feet high; branches opposite, smooth, slightly quadrangular. *Leaves* 2 to 4 or 5 inches long, and 1 to 2 and a half inches wide, oval, or elliptic-ovate, acuminate, smooth above, pubescent beneath, finely but rather obtusely serrate, the serratures with small incurved sphacelate points; petioles about half an inch long. *Common peduncles* 1 to 2 inches long, trichotomously branched; the central branch bearing one, and the lateral branches bearing two or three flowers; *pedicels* a quarter to half an inch long, with minute subulate *bracts* at base. *Calyx* persistent; segments short, roundish ovate, finally dark purple. *Petals* 4, dark purple, roundish obovate. *Stamens* 4. *Capsule* 3 or 4-valved, purple, or palish crimson, when mature; valves somewhat obcordate, and angularly channelled opposite the septum. *Seeds* elliptic-ovoid, about one third of an inch long, smooth, white, or tinged with purple, nearly enclosed in a bright red succulent *arillus*.

Hab. Woodlands; Forks of Brandywine; not common. *Fl.* June. *Fr.* Octo.

Obs. This species occurs in rich woodlands, along the Brandywine,—also along French Creek; but is not common. It is often cultivated as an ornamental shrub.

2. E. AMERICANUS, *L.* Branches smooth, 4-angled; leaves subsessile, elliptic-lanceolate, acute, somewhat crenate-serrate; peduncles 1 to 3-flowered; capsules verrucose-echinate. *Beck, Bot. p.* 72.
E. sempervirens. *Marsh. Arbust. p.* 44.

AMERICAN EUONYMUS. *Vulgò*—Burning Bush. Strawberry-tree.

Stem 2 to 5 or 6 feet high, slender; branches opposite, spreading, quadrangular, deep green. *Leaves* 1 to 2 and an half inches long, and half an inch to three quarters wide, lanceolate, often a little falcate, rather obscurely serrate, smooth and somewhat coriaceous, on very short petioles. *Common peduncles* about half an inch long, slender, 1, 2, or 3-flowered. *Calyx* persistent; segments 5, nearly obsolete, finally rounded, mucronate with the persistent filaments, dark purple. *Petals* 5, greenish yellow with a purple tinge, spreading, unguiculate, the border orbicular. *Capsule* 5-valved, muricate, or thickly covered with abruptly acuminate warts, bright deep crimson when mature. *Seeds* ovoid, smooth, white, about half the size of the preceding, mostly 2 enveloped in each scarlet *arillus*.

Hab. Moist woodlands: West Chester; Willistown: not common. *Fl.* June. *Fr.* Oct.

Obs. At maturity, the capsules are fully expanded,—whereby the duplicate membranes which form the dissepiments are drawn across, like curtains, between the open valves; and each arillus, thrown from its cell, is suspended at the apex of the valve. This is a very pretty little species,—the mature capsules in autumn, being a bright crimson, and continuing for several weeks. It was first detected in this vicinity in 1827, by Mr. WASHINGTON TOWNSEND: and has been found also in Willistown, by Mr. GEO. W. HALL I think the specimens found by Mr. Townsend (in Patton's woods, West Chester), belong to the *var. sarmentosus, Nutt.* Two other species are enumerated in the U. States; one of which, however, is doubtful.

† † *Fruit a Berry.*

115. VITIS. *L. Nutt. Gen.* 219.

[An ancient Latin name; of obscure derivation.]

DIOICOUSLY POLYGAMOUS: *Calyx* minute, somewhat 5-toothed. *Petals* cohering at apex, caducous. *Stigma* subsessile, obtuse. *Berry* 5-seeded; some of the seeds often abortive.

Shrubby vines: climbing by tendrils, which appear to be abortive racemes; joints of the stem tumid; leaves simple, alternate, stipular; peduncles racemose, opposite the leaves. *Nat. Ord.* 104. *Lindl.* VITES.

1. V. LABRUSCA, *L.* Branches and peduncles ferruginous-tomentose; leaves broad-cordate, often somewhat 3-lobed, acutely dentate, densely cinereous-tomentose beneath; fertile racemes small; berries large. *Beck, Bot. p.* 66.
V. vulpina. *Marsh. Arbust. p.* 165. *Bartram, in Med. Reposit. Hexade* 2. *Vol.* 1. *p.* 21. Not of *Linn.*
Also ? V. labruscoides. *Muhl. Catal. p.* 27.

Vulgò—FOX Grape.

Stem 15 to 20 or 30 feet long, straggling over bushes and small trees. *Leaves* 4 to 6 inches in length, and as wide as long, (on young vigorous branches often much larger), roundish cordate, often 3-lobed, teeth mucronate, the under surface clothed with a dense hoary tomentum, sometimes a little tawny, that on the nerves and veins ferruginous; *petioles* 2 to 3 inches long. *Flowers* dioicous by abortion. Common *peduncle* about an inch long. Abortive *racemes* compound, paniculate; fertile ones mostly simple, few-flowered. *Petals* yellowish green, united at apex

(as in all the genus) and forced from their base by the stamens, which elevate them in the form of an umbrella,—when they speedily fall off. *Berries* in rather short clusters, globose, large (about half an inch in diameter), varying at maturity from nearly black to dark amber or copper color, and greenish white; of a musky or rancid flavor.

Hab. Moist thickets; margins of rivulets: frequent. *Fl.* June. *Fr.* Sept.

Obs. In the wild state, we find the varieties in the *fruit*, above noted; and in our gardens and vineyards we have grapes under several names, which appear to be nothing more than *varieties* of this—(or possibly some of them may be *hybrids*)—such as the *Isabella grape*, the *Schuylkill* (called also *Alexander's*, and *Tasker's*) *grape*, the *Catawba grape*, and *Blanvi's grape*. The two former of these are nearly black; the two latter, copper or amber colored,—with less of the musky flavor than the others. The *Schuylkill* and *Catawba* varieties have been cultivated with most success, in this County.

2. V. ÆSTIVALIS, *Mx.* Leaves broad-cordate, often 3 to 5-lobed, or sinuate-palmate, coarsely and unequally dentate, loosely ferruginous-tomentose beneath; fertile racemes long, compound; berries small. *Beck, Bot. p.* 66.
V. vinifera americana. *Marsh. Arbust. p.* 165.
V. sylvestris, *or* occidentalis. *Bartram, l. c.*
V. intermedia. *Muhl. Catal. p.* 27.

SUMMER VITIS. *Vulgò*—Little Grape. Summer Grape.

Stem 20 to 40, and sometimes 60 feet, or more, in length. *Leaves* 4 to 8 inches long, and nearly as wide as long, roundish cordate, 3-lobed, or palmate-5-lobed, with the sinuses rounded; teeth unequal, broad at base and abruptly acute; the younger leaves with a loose cobweb-like russet pubescence beneath, which becomes coarser and more hirsute with age; *petioles* 2 to 4 inches long. Common *peduncle* 1 to 2 inches long, often with a tendril branching from it. *Racemes* long, compound; the flowers often in umbellate clusters on the branches. *Berries* small, varying in size (generally about one fourth of an inch in diameter), globose, deep blue, or nearly black, and covered with a glaucous powder, when mature; of a sprightly agreeable flavor.

Hab. Thickets; fence-rows; and woodlands: common. *Fl.* June. *Fr.* Octo.

Obs. This species presents several varieties; some of them with a larger fruit, which is much esteemed, and well worthy of culture. It sometimes attains to a great height, in rich woodlands;—the upper branches sustaining it by clinging to the limbs of tall trees, and gradually ascending, whilst the older branches below die and drop off, leaving the stem naked, and suspended,—somewhat resembling a topgallant halyard, *belayed* at the root!

3. V. CORDIFOLIA, *Mx.* Leaves cordate, acuminate, incised-dentate, smooth on both sides, thin and somewhat membranaceous; racemes loose, slender; berries small. *DC. Prodr.* 1. *p.* 634.
V. Labrusca. *Marsh. Arbust. p.* 165. Not of *Linn.*
V. serotina. *Bartram, l. c.*
V. vulpina. *Muhl. Catal. p.* 27. *Torr. Fl.* 1. *p.* 264. *Ejusd. Comp. p.* 121. *Hook. Am.* 1. *p.* 115. *Beck, Bot. p.* 66. *Eat. Man. p.* 396. Not ? of *Linn.*

HEART-LEAVED VITIS. *Vulgò*—Chicken Grape. Winter Grape.

Stem 10 to 20 feet long, climbing and spreading over bushes, along hedge-rows *Leaves* 2 to 6 inches long, and 2 to 4 or 5 inches wide, cordate, often conspicuously acuminate, coarsely toothed, teeth acuminate, smooth on both sides, and a little shining,—but the nerves beneath are pubescent, with villose tufts in the angles; *petioles* 2 to 5 inches long. Common *peduncle* half an inch to 1 or 2 inches long *Racemes* compound, loose, often with long branches at base, which are sometimes abortive, and become tendrils. *Flowers* small, numerous. *Berries* small, of a greenish amber color, or sometimes nearly black, when mature, very acerb, and late in ripening.

Hab. Fence-rows, and thickets: along Brandywine: frequent. *Fl.* June. *Fr.* Nov

Obs. Sir *J. E. Smith* (*in Rees' Cyclop.*), Prof. *Torrey* and *Hooker*, and some other distinguished Botanists, have supposed that this is the V. *vulpina*, of *Linnæus*: But from all the information I can obtain, I incline to agree with Mr. *Elliott*, in referring the original V. *vulpina* to the V. *rotundifolia*, of *Mx.* *Linnæus* probably received his plant from Virginia; and I ascertained when at Suffolk, Virginia, in 1831, that the V. *rotundifolia* is there universally known by the name of *Fox grape*. Mr. *Elliott* also confirms this fact, of the common name of the plant, in the low country further south. Now, as the brief description by *Linnæus*, agrees quite as well with the *Fox grape* of the South, as it does with our V. *cordifolia*, I have been led to the conclusion that the former is the true V. *vulpina*. I find, moreover, that the venerable *William Bartram*, (See *Med. Reposit. l. c.*) was of the same opinion. The V. *rotundifolia*, *Mx.* is very remarkable for one feature. It is known that our northern grape vines have a dark-brown loose lamellated stringy bark; whereas this southern species has a more ligneous appearance,—with a close greyish-brown bark, covered with small cinereous warts. It is called V. *verrucosa*, by *Muhlenberg*.

4. V. VINIFERA, L. *Leaves lobed, sinuate-dentate, naked or tomentose; flowers all perfect.* DC. Prodr. 1. p. 633.

WINE-BEARING VITIS. Vulgò—*Wine Grape. English Grape.* &c. Gallicè—*La Vigne.* Germ.—*Der Weinstock.* Hispanicè—*La Vid.*

Stem 10 *to* 20 *feet or more in length* (*usually prevented from extending itself, by lopping*). Leaves *more or less lobed, generally smaller than our native species,—sometimes very glabrous and shining.* Racemes *loose, or crowded, ovoid, or cylindric.* Berries *globose, oblong, or oboroid, dark blue, amber colored, or greenish white, when mature, fleshy or watery, sweet, or sub-acid.*

Hab. *Gardens, and about houses: not common.* Fl. *June.* Fr. *Aug.*

Obs. *Several of the* varieties *of this multifarious species have been cultivated on a small scale, in this County: but the success has not been encouraging. There seems to be a defect, either in the climate, or in the skill of the cultivators, which renders the crop extremely uncertain. The variety called* English grape, *or* Miller's Burgundy, *appears generally to succeed the best; but it often fails. Indeed, the culture of our* native *varieties, or hybrids, which was attempted with great spirit, a few years since, has been attended with so much disappointment that it is now nearly abandoned,—except for mere family use. Two or three additional native species are enumerated in the U. States.*

116. AMPELOPSIS. *Mx.* *DC. Prodr.* 1. *p.* 632.

[Greek, *Ampelos*, Vine, and *opsis*, aspect; from its resemblance to the Vine.]

Calyx nearly entire. *Petals* opening at apex, spreading, or becoming reflexed. *Ovary* conical, not immersed in the disk. *Berry* 2 to 4-seeded.

Shrubby vines: stem brittle or soluble at the joints, climbing; leaves simple, or compound; flowers in cymose racemes. *Nat. Ord.* 104. *Lindl.* VITES.

1. A. HEDERACEA, *DC.* Stem climbing by radicating processes and tendrils; leaves digitate by fives, on long petioles; leaflets ovate-oblong, acuminate, mucronate-dentate above the middle, smooth, petiolate; racemes somewhat dichotomously cymose. *Beck, Bot. p.* 65.
A. quinquefolia. *Mx. Am.* 1. *p.* 160. *Muhl. Catal. p.* 27. *Hook. Am.* 1. *p.* 114. *Lindl. Ency. p.* 176. *Eat. Man. p.* 15.
Hedera quinquefolia. *Marsh. Arbust. p.* 59.
Vitis hederacea. *Willd. Sp.* 1. *p.* 1182. *Ait. Kew.* 2. *p.* 52. *Bigel. Bost. p.* 93.
Cissus hederacea. *Pers. Syn.* 1. *p.* 143. *Pursh, Am.* 1. *p.* 170. *Nutt. Gen.* 1. *p.* 144. *Bart. Phil.* 1. *p.* 118. *Ell. Sk.* 1. *p.* 305. *Torr. Fl.* 1. *p.* 266. *Ejusd. Comp. p.* 121. *Florul. Cestr. p.* 28.

IVY-LIKE AMPELOPSIS. *Vulgò*—Virginian Creeper. American Ivy.

Stem 10 to 30 or 40 feet long, diffusely branching, climbing trees and walls, clinging to them by adhesive expansions of the points of the tendrils. *Leaves* compound; common petiole 2 to 6 inches long; *leaflets* five, 2 to 4 inches long, and 1 to 2 inches wide, rather oblong, varying from lance-ovate to obovate, the lateral ones often somewhat rhombic, the middle one largest, all coarsely serrate dentate above the middle, mostly entire towards the base, and narrowed into short petioles. *Cyme* compound, with 2 or 3 principal branches; flowers all pedicellate, in small umbels of 3 to 5 at the ends of the branches, with minute lance-ovate *bracts* at base. *Calyx* small, spreading, orbicular, slightly crenate, forming 4 or 5 obsolete segments, becoming purple. *Petals* yellowish green, slightly cohering at first, but at length spreading and reflexed, saccate or cucullate at apex, with the margins inflexed. *Anthers* incumbent or horizontal. *Ovary* conic, or pyramidal, tapering to a short style; *stigma* small. *Berries* small, dark blue, or nearly black, when mature;—the peduncles at the same time becoming bright red, or crimson.

Hab. Woodlands: fence-rows, and thickets: common. *Fl.* July. *Fr.* Octo.

Obs. Sir *J. E. Smith (in Rees' Cyclop.)* contends that this is a true *Vitis:* But, although nearly allied, I think it may be very properly separated from our Grape vines. It is sometimes transplanted, as an ornament, by the walls of houses,—to which it firmly adheres by radicating processes from the stems, and also by a curious expansion of the extremities of the tendrils. Two or three other species are enumerated in the U. States.

§ 2. *Ovary inferior.* a. *Corolla monopetalous.*
† *Fruit a Capsule.*

117. LOBELIA. *L. Nutt. Gen.* 568.
[Named in honor of *Matthias de Lobel;* a Flemish Botanist.]

Calyx 5-parted. *Corolla* tubular, irregular, somewhat labiate, cleft on the upper side nearly to the base. *Stamens* more or less united; *anthers* coalesced into a tube, which is curved, perforate, and bearded at summit. *Stigma* 2-lobed. *Capsule* sometimes half superior, 2 or 3-celled, opening at summit. *Seeds* numerous, minute, oblong, scabrous.

Herbaceous, or rarely fruticose: leaves alternate; flowers solitary, axillary, or in terminal bracteate racemes. *Nat. Ord.* 175. *Lindl.* LOBELIACEÆ.

1. L. CLAYTONIANA, *Mx.* Stem erect, simple, somewhat pubescent; leaves sessile, oblong, mostly obtuse, obscurely denticulate, pubescent,

radical ones spatulate-obovate; raceme virgate, naked; calyx-segments subulate, nearly as long as the tube of the corolla. *Beck, Bot. p.* 215. L. pallida, *Bigel. Bost. p.* 86. Also, *Muhl. Catal. p.* 22. *Bart. Phil. 2. p.* 62. *Ell? Sk.* 1. *p.* 265.

CLAYTON'S LOBELIA.

Root perennial. *Stem* 1 to 2 or 3 feet high, rather slender, somewhat angular and grooved, simple, sometimes two or three branches or stems from the root, often nearly smooth. *Radical leaves* 1 to 2 or 3 inches long, and about an inch wide, obovate-oblong, or spatulate, nearly entire: *stem leaves* 1 to 2 inches long, and about half an inch wide, lance-oblong, upper ones smaller, acute, and denticulate. *Raceme* 6 to 10 or 12 inches long, slender. *Pedicels* about one fourth of an inch long, with each a lance-linear denticulate *bract* at base, longer than the pedicel. *Calyx* smoothish at base. *Corolla* pale blue, smallish.

Hab. Fields, meadows, and woodlands: frequent. *Fl.* June—Aug. *Fr.* Aug.—Oct.

2. L. PUBERULA, *Mx.* Pubescent; stem erect, simple; leaves sessile, elliptic, or ovate-oblong, mostly obtuse, obscurely crenate-denticulate; raceme spiked, rather secund, leafy at base; calyx hirsute at base, with lanceolate ciliate segments as long as the tube of the corolla. *Beck. Bot. p.* 215.

PUBERULENT, OR DOWNY-PUBESCENT LOBELIA.

Root perennial. *Stem* about 2 feet high, nearly terete. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, varying from obovate to oblong-oval, and lance-ovate, the upper ones smaller and acute, nearly entire, or slightly repand and crenate, clothed with a short and somewhat silky pubescence. *Raceme* 4 to 6 or 8 inches long; flowers nearly sessile, with each a small ovate-lanceolate serrate-toothed leaf at base. *Calyx* covered with bristly hairs at base. *Corolla* bright blue, sometimes tinged with purple, rather large.

Hab. Moist low grounds: Londongrove: rare. *Fl.* July. *Fr.*

Obs. This species, which is very rare with us, was detected in 1827, in the above locality, by WILLIAM JACKSON, Esq. I have also received it from Mr. JAMES TRIMBLE,—who found it growing along creek bottoms, near the Brick Meeting House, in Nottingham, Maryland, adjoining Chester County.

3. L. SYPHILITICA, *L.* Stem erect, simple, somewhat hirsute; leaves sessile, oblong-lanceolate, acute or acuminate, unequally sinuate-serrulate, somewhat pilose; raceme leafy; calyx hispidly ciliate, with the sinuses reflexed. *Beck, Bot. p.* 215.

SYPHILITIC LOBELIA.

Root perennial. *Stem* 1 to 3 or 4 feet high, angular, pilose on the angles. *Leaves* 2 to 4 inches long, and an inch to an inch and half wide, somewhat erosely serrate-dentate, sprinkled with appressed hairs. *Raceme* 6 to 10 or 12 inches long, stout; *pedicels* one fourth to half an inch long, with each an ovate-lanceolate ciliate-serrulate *leaf* at base, gradually smaller towards the summit. *Calyx-segments* shorter than the tube of the corolla, lanceolate, acuminate, bristly-ciliate, with the margins of the sinuses folded back. *Corolla* mostly bright blue, sometimes tinged with purple, and rarely milk white, large. *Capsule* half superior, ovoid, acute. *Seeds* ovoid-oblong, scabrous, tawny, or ferruginous.

Hab. Swampy grounds, and margins of rivulets: frequent. *Fl.* Aug.-Sept. *Fr.* Oct

Obs. A showy plant,—next in beauty, among our native species, to the L. cardinalis. It was formerly an *Indian nostrum*; and had such repute, that the Secret

was purchased of the Aborigines. But when once known, it soon shared the usual fate of purchased Nostrums; and possibly may have been subjected to unmerited neglect.

4. L. INFLATA, *L.* Stem erect, somewhat paniculately branched, hirsute; leaves sessile, lance-ovate, crenate-dentate, pilose; racemes leafy; capsules inflated. *Beck, Bot. p.* 215.

INFLATED LOBELIA. *Vulgò*—Eye-bright. Indian Tobacco.

Lactescent. *Root* biennial, *Muhl. Eat.* (perennial, *Ell.* annual, *Willd. Torr. Bigel.*). *Stem* 9 to 18 inches high, sometimes alate-angular by the decurrence of the leaves, often very hairy; branches axillary. *Leaves* 1 to 2 or 3 inches long, and half an inch to an inch and half wide, more or less ovate, rather acute, unequally crenate or sinuate-dentate, pilose. *Peduncles* axillary, one fourth to half an inch long, roughish pubescent. *Corolla* pale blue, small. *Capsule* ovoid, or oval, thin and membranaceous, 10-nerved, reticulately veined, smoothish. *Seeds* numerous, minute, elliptic-oblong, subdiaphanous, rough with ferruginous, reticulated ridges, under a lens.

Hab. Pastures; roadsides, &c. frequent. *Fl.* July—Sept. *Fr.* Aug.—Octo.

Obs. This is an acrid plant, possessing active emetic, cathartic, and narcotic properties; and may be used for good or for evil, according to the degree of skill and discretion with which it is employed. It is said to be a prominent article in the Materia Medica of a modern race of Empirics, who, in some districts of our country, have attained a notoriety, and consequence, which is not very creditable to the discernment of the communities in which they flourish. The indiscriminate use of *any* active medicine, is as dangerous as it is preposterous. "Querer curar toda especie de enfermos y de enfermedades con un mismo medicamento, no es medicina, sino lo que llaman charlataneria, no solo ridicula en quien la profesa, sino dañosa para quien la usa."

5. L. CARDINALIS, *L.* Stem erect, simple, pubescent; leaves subsessile, oblong-lanceolate, acuminate, unequally denticulate, minutely roughish-pubescent; raceme somewhat secund, and leafy below; stamens longer than the corolla. *Beck, Bot. p.* 215.

CARDINAL LOBELIA. *Vulgò*—Cardinal Flower.

Root perennial. *Stem* 2 to 3 feet high, simple, but often growing in bunches, angular, generally hirsutely pubescent (very smooth, *Torr.*). *Leaves* 3 to 6 inches long, and 1 to 2 inches wide, tapering at base almost to a petiole, sinuate-denticulate, or erosely serrate-dentate, thickly sprinkled with short bristly hairs. *Raceme* 6 to 12 or 15 inches long, many-flowered. *Flowers* large, on hirsute pedicels half an inch to three quarters in length; *bracts* linear-lanceolate, glandular-denticulate, longer than the pedicels. *Calyx* with a short obtusely turbinate tube, and long subulate-linear erect sparingly ciliate segments. *Corolla* bright crimson; the tube about an inch long; the 3 lobes of the lower lip lance-oblong, acuminate, the two lobes of the upper lip much narrower, linear-oblong. *Stamens* one third longer than the tube of the corolla; *filaments* red, partially separated below, flat; *anthers* greyish blue, connate, cucullate, with a dense tuft of white hairs on the lower side of the orifice at apex. *Stigma* at first within the tube of the anthers, and girt with a dense tuft of hairs,—at length protruded, 2-lobed, and naked. *Capsule* half superior, ovoid, acuminate. *Seeds* very numerous, minute, oblong, scabrous, tawny, or ferruginous.

Hab. Swamps, and margins of rivulets: frequent. *Fl.* July—Oct.—*Fr.* Sept.-Oct.

Obs. This is a superb plant, and worthy of a place in every ornamental garden. It is a long time in flower,—commencing to bloom at the base of the raceme and gradually extending to the summit. Vermifuge properties have been ascribed to this species; but I know not how correctly. Five or six additional species are enumerated in the U. States.

118. CAMPANULA. *L. Nutt. Gen.* 209.

[Latin, *Campanula*, a little Bell; from the form of the corolla.]

Calyx mostly 5-cleft. *Corolla* mostly campanulate, and 5-cleft, closed at bottom by 5 staminiferous valves. *Stigma* mostly 3-cleft. *Capsule* 3-(rarely 5-)celled, opening by lateral pores.

Herbaceous, or rarely suffruticose: lactescent; leaves mostly alternate; flowers bracteate, axillary, solitary, or fasciculate, sometimes in terminal spikes, or panicles. *Nat. Ord.* 174. *Lindl.* CAMPANULACEÆ.

1. C. AMPLEXICAULIS, *Mx.* Stem mostly simple, erect, angular; angles hispid; leaves subcordate-reniform, crenate-dentate, concave, amplexicaul; flowers axillary, sessile, glomerate. *Beck, Bot. p.* 213. C. perfoliata. *Willd. Sp.* 1. *p.* 915. *Pers. Syn.* 1. *p.* 193. *Ait. Kew.* 1. *p.* 352. *Muhl. Catal. p.* 22. *Pursh, Am.* 1. *p.* 160. *Bigel. Bost. p.* 85. *Lindl. Ency. p.* 166.

STEM-CLASPING CAMPANULA.

Root annual. *Stem* 9 to 18 inches high, rarely branched; angles hispid with spreading or somewhat retrorse bristles. *Leaves* half an inch to three-quarters in length, and nearly an inch wide, closely amplexicaul; upper surface concave and nearly smooth; under surface prominently veined; somewhat hispid on the veins, and ciliate on the margin. *Flowers* closely sessile, 1 to 3 or 4 in the axil of each leaf. *Calyx-segments* ovate-lanceolate, acuminate, with one or two bristles at apex, somewhat spreading, sparingly ciliate. *Corolla* bluish purple; lobes ovate. *Stamens* scarcely half as long as the corolla; *filaments* dilated at base, forming a kind of connivent valves. *Capsule* oblong, angular, crowned with the persistent calyx-segments, 3-celled, opening on the sides by 3 oblong valves, keeled within, which are situated over the dissepiments, detach themselves below, and become revolute outward and upward. *Seeds* numerous, minute, lenticular, reddish brown, smooth and shining.

Hab. Pastures, and grain-fields: common. *Fl.* June. *Fr.* July.

Obs. Dr. *Torrey* mentions a small slender *variety*, with apetalous flowers, and 3-cleft calyx, which I have not observed here.

2. C. AMERICANA, *L.* Stem erect, sometimes branched, smoothish, or pilose; leaves ovate-lanceolate, much acuminate, uncinately serrate, membranaceous, narrowed at base, the lower ones often subcordate, with ciliate petioles; flowers subsolitary, nearly sessile, in a terminal leafy raceme; corolla subrotate; style exserted. *Beck, Bot. p.* 213. C. acuminata. *Mx. Am.* 1. *p.* 108. *Bart. Phil.* 1. *p.* 114. *Ell. Sk.* 1. *p.* 262. Also, *Pers. Syn.* 1. *p.* 190. *Pursh, Am.* 1. *p.* 159. *Nutt. Gen.* 1. *p.* 136. *Torr. Fl.* 1 *p.* 237. *Ejusd. Comp. p.* 112. *Eat. Man. p.* 65.

AMERICAN CAMPANULA.

Root perennial? (biennial, *Muhl.* annual, *Willd.*). *Stem* 2 to 3 feet high, often branched, and considerably pilose. *Leaves* 2 to 5 inches long, and an inch to an

inch and half wide ; those on the stem much narrowed and tapering at base, forming a kind of winged petiole near an inch long, smoothish, bristly on the nerves beneath, the margin somewhat ciliate, the serratures mucronate, and a little uncinate. *Flowers* rather distant, in a long terminal *raceme*, which is leafy below, and often with 2 or 3 flowers in the axil of a leaf; *pedicels* short, clavate, with subulate-linear *bracts* at base. *Calyx-segments* subulate, spreading. *Corolla* pale purplish blue, spreading ; lobes lance-oblong, acute. *Stamens* shorter than the corolla ; *filaments* much dilated below, and pubescent on the margin. *Style* much exserted, near 3-fourths of an inch long.

Hab. Moist shaded grounds ; Brandywine ; Great Valley : frequent. *Fl.* July. *Fr.*

3. C. APARINOIDES, *Pursh.* Stem slender, flaccid, much branched above, acutely subtriangular; angles, with the margin and midrib of the leaves, retrorsely aculeate ; leaves linear-lanceolate, remotely crenate-serrate, smooth above; peduncles terminal, filiform, flexuose. *Beck, Bot. p.* 213.

C. flexuosa ? *Mx. Am.* 1. *p.* 109. *Pers. Syn.* 1. *p.* 188.

C. erinoides. *Willd ? Sp.* 1. *p.* 917. *Muhl. Catal. p.* 22. *Nutt. Gen.* 1. *p.* 136. *Ell. Sk.* 1. *p.* 263. *Bigel. Bost. p.* 85. *Eat. Man. p.* 65.

APARINE-LIKE CAMPANULA.

Root annual ? (perennial ? *Ell.*). *Stem* 12 to 18 inches long, weak and straggling, supported by other plants; branches spreading. *Leaves* half an inch to an inch and half long, and a sixteenth to one third of an inch wide, sometimes nearly elliptic-lanceolate, sessile. *Peduncles* half an inch to an inch or more in length, very slender, solitary. *Flowers* small, nodding. *Calyx-segments* lance-ovate, acute. *Corolla* whitish with purple veins, campanulate ; lobes lance-ovate. *Filaments* hairy, half the length of the style. *Style* about as long as the corolla.

Hab. Swamps, and wet thickets: frequent. *Fl.* July. *Fr.*

Obs. The C. *flexuosa*, *Mx.* has been supposed to be the same with our plant; but if so, it is very badly described. Two or three other species are enumerated in the U. States ; of which, possibly, C. *rotundifolia* may yet be found in the northern side of this County. I have seen it in abundance, at Easton, on the Delaware.

119. DIERVILLA. *Tournef. Nutt. Gen.* 215.

[Dedicated to M. *Dierville ;* a French Surgeon, who introduced it into Europe.]

Calyx oblong, 5-cleft, bibracteate at base. *Corolla* funnel-form, 5-cleft, spreading, much longer than the calyx. *Stamens* somewhat exserted. *Stigma* capitate. *Capsule* not crowned with the calyx, oblong, acute, 1-celled, many-seeded.

Shrubby : erect; leaves opposite ; peduncles axillary and terminal, bracteate, often dichotomous. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

1. D. CANADENSIS, *Willd.* Leaves ovate, or lance-ovate, acuminate, serrate, smooth, on short petioles ; peduncles subterminal, few-flowered. *DC. Prodr.* 4. *p.* 330.

D. Tourneforti. *Mx. Am.* 1. *p.* 107. *Nutt. Gen.* 1. *p.* 139. *Torr. Fl.* 1. *p.* 238. *Ejusd. Comp. p.* 113. *Beck, Bot. p.* 157.

D. humilis. *Pers. Syn.* 1. *p.* 214. *Lindl. Ency. p.* 170.

D. lutea. *Pursh, Am.* 1. *p.* 162.

Lonicera Diervilla. *Marsh. Arbust. p.* 81. *Willd. Sp.* 1. *p.* 989. *Ait. Kew.* 1. *p.* 380.

CANADIAN DIERVILLA.

Root creeping. *Stem* 2 to 3 feet high; branches smooth, often slightly quadrangular. *Leaves* 2 to 5 inches long, and 1 to 2 and an half inches wide, slightly pilose on the midrib, and ciliate on the margin; petioles one fourth to half an inch long. *Pedancles* in the axils of the superior leaves, half an inch to near an inch long, 2 to 3-flowered, bracteate at the base of the pedicels. *Calyx* ventricose below, with 2 minute subulate bracts at base; segments subulate, less than half the length of the corolla. *Corolla* greenish yellow, slightly pubescent; lobes (3, *DC.* and *Hook.*), oblong, unequal; throat somewhat dilated, pilose within. *Style* longer than the stamens, pilose below. *Capsule* contracted above, 1 celled, *DC. Hook.* (4-celled, *Nutt. Torr.*). *Seeds* minute.

Hab. Moist, rocky woodlands: frequent. *Fl.* June. *Fr.* Sept.

Obs. This neat little shrub occurs more frequently than I formerly supposed. It is the only species in the U. States.

† † *Fruit a Berry.*

120. LONICERA. *L. DC. Prodr.* 4. *p.* 330.

[Dedicated to *Adam Lonicer*; a German Botanist.]

Calyx 5-toothed. *Corolla* tubular, elongated, subcampanulate, or funnel-form; limb 5-cleft, mostly irregular. *Stamens* exserted. *Style* filiform; stigma capitate. *Berry* 3-celled; cells few-seeded. *Seeds* crustaceous.

Shrubby: mostly with twining stems; leaves opposite, often connate at base; flowers sessile, verticillate, axillary, or in terminal heads. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

1. L. PARVIFLORA, *Lam.* Glabrous; branches somewhat volubile; leaves deciduous, glaucous beneath, the upper pair connate-perfoliate, large, lower ones subconnate; flowers in terminal verticillate pedunculate heads; corolla somewhat ringent; tube short, gibbous at base; filaments bearded. *Beck, Bot. p.* 158.

L. dioica. *Willd. Sp.* 1. *p.* 983. *Ait. Kew.* 1. *p.* 377. *Muhl. Catal. p.* 23.

Caprifolium bracteosum. *Mx. Am.* 1. *p.* 105.

C. parviflorum. *Pursh, Am.* 1. *p.* 161. *Nutt. Gen.* 1. *p.* 138. *Ell. Sk.* 1. *p.* 272.

C. dioicum. *Lindl. Ency. p.* 170.

SMALL-FLOWERED LONICERA. *Vulgò*—Wild Honeysuckle.

Stem 6 to 8 or 10 feet long, somewhat twining, terete, ash-colored. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 and a half inches wide, varying from ovate to oblong and obovate-oblong, obtuse, entire, very glaucous beneath, all sessile and more or less connate. *Flowers* generally in single terminal *heads*, of 2 or 3 verticils of 6 to 3 flowers each, on a common peduncle about an inch long (sometimes the head is nearly sessile). *Corolla* yellowish, with strong tinges of purple externally (yellow, *Torr.*); the tube about half an inch long, conspicuously gibbous near the base on the lower side, hairy within, the gibbous portion lined with small glandular tubercles; the lower lip of 1 elliptic-oblong obtuse reflexed lobe, the upper of 4 oblong obtuse recurved lobes. *Stamens* somewhat exserted, and hairy at base. *Style* a little longer than the stamens. *Berries* reddish orange color when mature. *Seeds* compressed, suborbicular, coated with a tawny scabrous-punctate shell.

Hab. Bank of the Schuylkill, at Black Rock; rare. *Fl.* May. *Fr.* July.

Obs. Collected by D. TOWNSEND, Esq. in 1836.

2. L. GRATA ? *Ait.* Stem volubile, climbing; leaves sub-perennial, obovate, ovate and oval, glaucous and reticulately veined beneath, the upper pairs mostly connate-perfoliate, lower ones distinct; flowers in subterminal and terminal sessile verticils; corolla ringent; tube long, not gibbous at base; filaments smooth. *Beck, Bot. p.* 158.
L. virginiana ? *Marsh. Arbust. p.* 80.
Caprifolium gratum ? *Pursh, Am.* 1. *p.* 161. *Nutt. Gen.* 1. *p.* 138. *Ell. Sk.* 1. *p.* 272. *Lindl. Ency. p.* 170.

GRATEFUL, OR AGREEABLE LONICERA. *Vulgò*—Wild Honeysuckle.

Stem 10 to 15 or 20 feet long, branching and twining, trailing unless supported; the young branches often quite pilose. *Leaves* 1 to 2 or 3 inches long, and an inch to an inch and half wide, mostly opposite (mostly in 3's, *Willd.*), rather obtuse, often slightly emarginate; two or 3 of the upper pairs connate, the inferior ones distinct, sessile, or often on short petioles. *Flowers* in verticils of about 6, in the axils of the two or three upper pairs of connate leaves. *Corolla* externally red or purplish, the limb at first nearly white, soon becoming tawny yellow; the tube an inch or more in length, tapering to the base, smooth within. *Stamens* exserted. *Style* about as long as the stamens. *Berries* orange red when mature.

Hab. Moist rocky woodlands; Ridley creek; Brandywine: rare. *Fl.* May. *Fr.* July.

Obs. This agrees so nearly with the description of L. *grata*, that I suppose it to be that species. It was found along Ridley creek, by MR. GEO. W. HALL, in 1831; and also along the Brandywine, above the forks, in 1835, by J. P. RUTTER, Esq. In warm situations, the leaf buds are very open and loose, and young leaves are often expanded, during the winter. Our plant has much general resemblance to the common cultivated Honeysuckle (L. *periclymenum*), and would be quite ornamental for arbours and porticos; but the flowers have almost too strong an odor to be perfectly agreeable. Honeysuckles have always been favorite plants; and the great English Bard thus beautifully alludes to them:—

"And bid her steal into the pleached bower,
"Where *Honeysuckles*, ripen'd by the sun,
"Forbid the sun to enter;—like favorites,
"Made proud by Princes, that advance their pride
"Against that power that bred it."—

MUCH ADO ABOUT NOTHING. *Act.* 3 *Sc.* 1.

Four or five additional species of this interesting genus have been found in the U. States.

121. TRIOSTEUM. *L. Nutt. Gen.* 216.

[Greek, *Treis*, three, and *Osteon*, a bone; in reference to its three bony seeds.]

Calyx 5-parted; segments lance-linear, about as long as the corolla. *Corolla* tubular, subequally 5-lobed, gibbous at base. *Stamens* included. *Stigma* capitate. *Berry* 3-celled, 3-seeded, crowned by the calyx-segments.

Herbaceous, rarely suffruticose: stem simple; leaves oppposite, subconnate; flowers axillary, subsessile, bracteate. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

1. T. PERFOLIATUM, *L.* Leaves lance-oval, or spatulate-ovate, acuminate, entire, abruptly narrowed at base, connate, pubescent beneath; axils 1 to 3-flowered; flowers sessile, dark purple. *Beck, Bot. p.* 157.
T. majus. *Mx. Am.* 1. *p.* 107.

PERFOLIATE TRIOSTEUM. *Vulgò*—Horse Gentian. Wild Coffee.

Root perennial, large. *Stem* 2 to 3 or 4 feet high, pubescent, often hirsute, somewhat viscid when young. *Leaves* 4 to 6 or 7 inches long, and 2 to 4 inches wide, often narrowed almost to a petiole at base, but always more or less connate, softly pubescent beneath, the upper surface sprinkled with hairs, and roughish-pubescent on the midrib and nerves, margin ciliate-pubescent. *Flowers* subverticillate, 1, 2, or 3 in the opposite axils, each with 1 or 2 linear *bracts* at base. *Corolla* dark brownish purple, about half an inch long, viscid-pubescent; lobes rounded; the gibbous portion of the tube glandular-pulverulent within. *Filaments* bearded. *Style* as long as the corolla, hairy below; *stigma* thick, somewhat lobed. *Berry* oval, pubescent, rather dry, orange color when mature (dark purple, *Pursh*, *Ell.*).

Hab. Rich, rocky wooodlands: fence-rows, &c. frequent. *Fl.* May-June. *Fr.* Sept.

Obs. The root of this plant is reputed to be medicinal, as an emetic and cathartic. It was formerly a favorite medicine—almost a Panacea—with the *aboriginal Doctors* of this County. There is one other species in the U. States,—viz. T. *angustifolium;* which, although it has not yet been detected in Chester County, most probably will be. I have received a specimen of it, collected near the Brick Meeting House, just within the Maryland line, by my friend Mr. James Trimble.

b. *Corolla pentapetalous: Fruit a Berry.*

122. RIBES. *L. Nutt. Gen.* 217.

[An ancient *Arabic* name; of uncertain meaning.]

Calyx campanulate, or tubular, 5-cleft; segments more or less colored. *Petals* small, inserted alternately with the *stamens* in the throat of the calyx. *Style* 2 to 4-cleft. *Berry* crowned with the shrivelled remains of the flower, 1-celled, pulpy, many-seeded.

Shrubby: unarmed, or aculeate; leaves alternate, lobed; flowers mostly in axillary racemes, bracteate. *Nat. Ord.* 45. *Lindl.* Grossulaceæ.

* *Unarmed.*

1. R. floridum, *L'Herit.* Leaves acutely 3-lobed, glandular-punctate on both sides; petioles longer than the leaves; racemes pendulous, retrorsely villose; calyx tubular; bracts longer than the pedicels. *Beck, Bot. p.* 136.

R. nigrum pennsylvanicum. *Marsh. Arbust. p.* 132.

R. recurvatum. *Mx. Am.* 1. *p.* 109. *Pers. Syn.* 1. *p.* 251. *Nutt. Gen.* 1. *p.* 140. Also, *Pursh, Am.* 1. *p.* 164. *DC. Prodr.* 3. *p.* 482.

Also, R. pennsylvanicum. *Nutt. l. c. Pers. l. c.*

Flowery Ribes. *Vulgò*— Wild Currant. Pennsylva. Black Currant.

Stems several, 3 to 4 feet high, slender, bark ash-colored with a dark ground, branches often recurved. *Leaves* 1 to 2 inches in length, and as wide as long, with 3 spreading acute lobes, sometimes with 2 indistinct additional lobes near the base, dentate-serrate, often somewhat cordate, pubescent beneath, both surfaces sprinkled with yellow resinous dots; *petioles* often membranaceously margined towards the base, and fringed with pubescent ciliæ. *Racemes* about 3 inches long, clothed with a soft retrorse pubescence; *flowers* numerous, rather large, many of them abortive; *bracts* lance-linear, pubescent. *Calyx* tubular-campanulate, about one-third of an inch long, half 5-cleft; segments obovate-oblong. *Petals* pale greenish yellow, oblong, shorter than the calyx-segments. *Style* the length of the calyx. *Berries* oblong, or roundish-ovoid, nearly black when mature.

Hab. Sandy banks; roadsides; borders of woods: frequent. *Fl.* May. *Fr.* July.

Obs. This has much resemblance to the common Black Currant of the gardens: the fruit, however, is inferior in size and quality, and usually but few berries on a raceme come to perfection.

2. R. NIGRUM, L. *Leaves* 3 *to* 5-*lobed, glandular-punctate beneath; petioles shorter than the leaves; racemes lax, pilose, with a distinct peduncle at base; calyx tubular-campanulate; bracts often shorter than the pedicels.* DC. Prodr. 3. p. 481.

BLACK RIBES. Vulgò—*Black Currant.*

Gall.–*Cassis.* Germ.–*Schwarze Johannisbeere.* Hisp.–*Ribes negra.*

Stems *numerous*, 3 *to* 5 *feet high, slender.* Leaves 2 *to* 3 *inches long, and nearly as wide as long, often somewhat* 5-*lobed, dentate-serrate, pubescent beneath, odorous when bruised, slightly viscid while young; the yellow resinous dots rare on the upper surface, numerous beneath.* Racemes *somewhat pendulous, clothed with a spreading pubescence, generally with a distinct single-flowered peduncle at base;* bracts *subulate, nearly as long and sometimes longer than the pedicels (much shorter,* DC.). Petals *yellowish-green (sometimes changed into stamens.* Withering.). Berries *roundish-ovoid, nearly black when mature.*

Hab. *Gardens: not common.* Fl. *April.* Fr. *June—July.*

Obs. *This is but seldom cultivated; and chiefly for the sake of the jelly afforded by the ripe fruit,—which is a popular and useful remedy for sore throats, colds, &c.*

3. R. RUBRUM, L. *Leaves obtusely* 3 *to* 5-*lobed, smooth above, pubescent beneath; petioles as long as the leaves; racemes nodding, nearly smooth; calyx short, and spreading nearly flat; bracts much shorter than the pedicels.* DC. Prodr. 3. p. 481.

RED RIBES. Vulgò—*Red Currant.*

Gall. *Groseillier rouge.* Ger. *Gemeine Johannisbeere.* Hisp. *Ribes roja.*

Stems *numerous*, 2 *to* 4 *feet high, slender.* Leaves 1 *to* 2 *and a half inches long, and rather wider than long, the outline somewhat pentagonal, unequally incised-dentate, the teeth rather obtuse, or with a very short abrupt acumination.* Racemes *spreading, or nodding;* bracts *very short, ovate.* Calyx *short, subcampanulate, expanded nearly flat; segments obovate, rounded.* Petals *greenish yellow, small, somewhat obcordate, or cuneate and emarginate.* Stigmas 2. Berries *globose, red when mature,—rarely white, or pearl color.*

Hab. *Gardens: common.* Fl. *April.* Fr. *June—July.*

Obs. *Very generally cultivated for its pleasant acid fruit,—from which, when mature, all housewives, yeleped "notable," make a tolerable domestic wine, and prepare a delicious jelly for the table. The full grown green berries, also, are much used by the pastry cook.*

* * *Aculeate.*

4. R. UVA-CRISPA, L. *Leaves obtusely* 3 *to* 5-*lobed, somewhat villose beneath, and on the petiole; peduncles mostly* 1-*flowered, bracteate; style and ovary villose; berry hairy, or smooth.* DC. Prodr. 3. p. 478. *R. Grossularia.* Florul. Cestr. p. 124. *Also,* Willd. Sp. 1. p. 1158. Pers. Syn. 1. p. 252. Ait. Kew. 2. p. 42. Lindl. Ency. p. 100.

Vulgò—*Goose-berry.*

Gall.–*Vrai Groseillier.* Germ.–*Die Stachelbeere.* Hisp.–*Uva espina.*

Stem 2 *to* 3 *feet high, diffusely branching, prickly.* Leaves 3-*fourths of an inch to an inch and a half long, and as wide as long, the outline rounded, incisely lobed and dentate, teeth rather obtuse;* petioles *much shorter than the leaves, frequently*

margined, and quite villose. Peduncles *solitary, or in pairs, about one-third of an inch long, pilose, often with one or two minute ovate bracts near the middle.* Calyx *campanulate;* segments *oblong, obtuse, at length reflexed, often purplish.* Petals *pale greenish yellow, oblong, rounded at apex, shorter than the calyx-segments.* Berries *solitary, pendulous, large (half an inch to near an inch in diameter), oval, greenish amber color when mature.*

Hab. *Gardens: frequent.* Fl. *April.* Fr. *July.*

Obs. *There appears to be several* varieties *of this plant,—which is cultivated for its fine fruit. It rarely succeeds well, with us;—partly, no doubt, owing to the climate,—and partly, perhaps, for want of skill and care in the management. The young fruit is apt to become covered with a russet kind of mould, which causes it to blight; and the bushes generally are prone to send up too many suckers from the root. My friend,* Mr. S. R. Gummere, *of* Burlington, N. J. *who is a Botanist, and a very successful Horticulturist, informs me that this last mentioned evil may be prevented, by carefully removing the buds from that portion of the cuttings (when they are planted,) which is inserted in the ground. Seventeen or eighteen additional species are enumerated as natives of the U. States; of which the* R. aureum, *or* Missouri Currant, *is much cultivated, and greatly admired, for the beauty and spicy fragrance of its flowers.*

B. Flowers incomplete. **a.** *Ovary superior.*

123. ANYCHIA. *Mx. DC. Prodr.* 3. *p.* 369.

[Greek, *Onyx, onychos,* a finger nail; from its supposed virtue in curing whitlows.]

Calyx 5-parted; segments oblong, connivent, subsaccate and callous at apex. *Corolla* 0. *Stamens* 3 to 5. *Style* short; *stigmas* 2, subcapitate. *Capsule* indehiscent, utricular, 1-seeded, embraced by the persistent calyx.

Herbaceous: dichotomously branching; leaves mostly opposite, with scarious stipules; flowers minute, solitary and dichotomal, or in small terminal fascicles. *Nat. Ord.* 150. *Lindl.* Illecebreæ.

1. A. dichotoma, *Mx.* Stem erect, or spreading, dichotomously branched; leaves subsessile, oblong-lanceolate, acute, cuneate at base, roughish punctate; terminal flowers sub-fasciculate. *Beck, Bot. p.* 131.

A. canadensis. *Ell. Sk.* 1. *p.* 307. *Hook. Am.* 1. *p.* 226.

Quœria canadensis. *Willd. Sp.* 1. p. 494. *Pers. Syn.* 1. *p.* 112. *Ait. Kew.* 1. *p.* 185. *Muhl. Catal. p.* 15. *Nutt. Gen.* 1. p. 158. *Bart. Phil.* 1. *p.* 74. *Bigel. Bost. p.* 99. *Florul. Cestr. p.* 17. *Eat. Man. p.* 295.

Dichotomous Anychia. *Vulgò*—Forked Chickweed.

Root annual (perennial, *Willd. Muhl. Ell.*). *Stem* 4 to 8 or 10 inches high, terete, slender, generally smoothish, sometimes retrorsely pubescent, often purple, diffusely branched, a little tumid at the bifurcations; branches filiform. *Leaves* one fourth to near three fourths of an inch long, and one sixteenth to one quarter of an inch wide, varying from lance-linear to elliptic-oblong and oblanceolate, opposite, often single at the branches, with 4 small ovate-lanceolate acuminate white skinny stipules at base. *Flowers* inconspicuous, solitary in the forks of the branches, or two or three together, terminal and subfasciculate, on very short pedicels, with minute scarious bracts. *Calyx-segments* green, with white margins, mostly gibbous at apex, sometimes flat. *Stamens* 3, rarely 5. *Nutt.* shorter

than the calyx. *Style* short; *stigmas* 2, diverging, or recurved. *Capsule*, or *Utricle*, rough, minutely verrucose. *Seed* subreniform-globose, brown, smooth and shining.

Hab. Dry hilly woodlands: common. *Fl.* June—Sept. *Fr.* Aug.—October.

Obs. This plant is variable in its pubescence, the size of the stipules, and some other features. The leaves at first are pellucid-punctate; but they are finally covered with rough ferruginous dots. *Nuttall* and *De Candolle* enumerate a second species in the U. States, as the genus now stands: but Dr. *Torrey* is probably more correct in reducing it to a *variety* of the foregoing.

b. *Ovary inferior.*

124. THESIUM. *L. Gen. Pl.* 410.

[A name adopted from the ancient Greek writers; derivation obscure.]

Perianth tubular-campanulate, mostly 5-cleft; segments colored. *Stamens* opposite to, and inserted at the base of, the perianth-segments; *anthers* villose externally. *Capsule* indehiscent, nut-like, 1-seeded, crowned by the persistent perianth.

Herbaceous, or suffruticose: leaves simple, alternate; flowers variously disposed,—in the American species, in a terminal corymbulose panicle. *Nat. Ord.* 64. *Lindl.* SANTALACEÆ.

1. T. UMBELLATUM, *L.* Leaves lance-ovate, or oblong, subsessile, entire, smooth; flowers in small corymbose-paniculate umbels. *Beck, Bot. p.* 308.
T. corymbulosum. *Mx. Am.* 1. *p.* 112.
Comandra umbellata. *Nutt. Gen.* 1. *p.* 157. *Bart. Phil.* 1. *p.* 128. *Florul. Cestr. p.* 62.

UMBELLATE THESIUM. *Vulgò*—Bastard Toad-flax.

Root perennial, somewhat ligneous, creeping horizontally. *Stem* 9 to 15 inches high, smoothish, striate, or slightly grooved, often branched near the summit. *Leaves* an inch to an inch and half long, and one third to half an inch wide, rather obtuse, sometimes acute, or mucronate, sessile, or often narrowed to a very short petiole, yellowish green, and somewhat glaucous. *Flowers* in small umbels, or fascicles, of 3 to 5, with involucrate *bracts* at base, the whole forming a corymbose panicle. *Perianth* adhering to or lined with a fleshy disk, with 5 obtuse gland-like teeth alternating with the segments; *segments* lance-ovate, acute, white. *Anthers* attached to the segments of the perianth by a tuft of yellow filaments. *Style* shorter than the perianth, about equalling the stamens; *stigma* simple. *Capsule* roundish, or sub-turbinate, angular, not opening, brittle, coated with the base of the perianth.

Hab. Dry sterile rocky banks: frequent, *Fl.* June. *Fr.* September.

Obs. The only species of the genus in the U. States.

125. NYSSA. *L. Nutt. Gen.* 788.

[A name of obscure derivation.]

DIOICOUSLY POLYGAMOUS: STAMINATE FL. *Calyx* 5-parted. *Corolla* 0, *Stamens* 5 to 10 or 12, inserted round a peltate gland-like disk. PISTILLATE FL. *Calyx* 5-cleft. *Corolla* 0. *Stamens* 5, or wanting. *Style* simple, mostly revolute. *Drupe* 1-seeded; *nut* oval, striate.

Trees: leaves alternate, entire, petiolate; flowers axillary, solitary, or in pedunculate clusters, often dioicous; drupe succulent. *Nat. Ord* 64. *Lindl.* SANTALACEÆ.

1. N. MULTIFLORA, *Walt.* Leaves oval, and obovate, acute at each end, often acuminate, very entire, the petiole midrib and margin villose; flowers dioicous; fertile peduncles mostly 3-flowered. *Beck, Bot. p.* 307. N. sylvatica. *Marsh. Arbust. p.* 97. *Mx. f. Sylva.* 3. *p.* 33. ICON, *tab.* 110. *Bart. Phil.* 2. *p.* 193. *Florul. Cestr. p.* 31.
N. villosa. *Willd. Sp.* 4. *p.* 1112. *Mx. Am.* 2. *p.* 258. *Ait. Kew.* 5. *p.* 479. *Muhl. Catal. p.* 96. *Pursh, Am.* 1. *p.* 177. *Nutt. Gen.* 2. *p.* 236. *Bigel. Bost. p.* 380. *Torr. Comp. p.* 372. *Lindl. Ency. p.* 870.
N. integrifolia. *Pers. Syn.* 2. *p.* 614.

MANY-FLOWERED NYSSA. *Vulgò*—Sour Gum. Black Gum.

Stem 30 to 50 or 60 feet high, sometimes near 2 feet in diameter at base; branches numerous, horizontal and often a little depending. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, varying from lanceolate to oval and obovate, dark green and shining on the upper surface, paler and pubescent beneath, the margin villose-ciliate; petioles half an inch to an inch long, often margined, conspicuously villose-ciliate; when old, nearly naked. *Staminate flowers* pedicellate, 2 or 3 to 5 or 6 in an open cluster, on a slender pubescent common peduncle about an inch long. *Pistillate flowers* sessile, mostly 3 in a dense involucrate clustor (sometimes 2, or 1), on a clavate pubescent common peduncle, at first about half an inch, finally an inch to an inch and half, long. *Drupe* elliptic, near half an inch long, bluish black when mature,—rarely more than 2 perfected, and often but one, on a common peduncle.

Hab. Moist low grounds; woodlands: frequent. *Fl.* May—June. *Fr.* Sept.

Obs. The woody fibres of this tree are remarkably interlocked, so as to render it very difficult to split; on which account it is much used for making naves, or *hubs*, for carriage wheels,—and also hatter's blocks. The younger trees, when growing solitary, have much symmetry—affording a fine shade; and in autumn the leaves add greatly to the picturesque appearance of the country, by changing to a bright crimson color. Four other species are enumerated in the U. States.

[Prinos verticillatus. *Hexandria Monogynia*]

[Acer rubrum, and A. Negundo. *Octandria Monogynia.*]

[Rhododendron nudiflorum, and R. viscosum. *Decandria Monogynia.*]

[Cassia nictitans. *Diadelphia Decandria.*]

Order 2. Digynia.

A. OVARY SUPERIOR. § 1. *Flowers complete.*

a. *Corolla monopetalous.* † *Fruit a Capsule.*

126. GENTIANA. *L. Nutt. Gen.* 248.

[Named after *Gentius*, a king of Illyria; who, it is said, first used it as a medicine.]

Calyx tubular, 4 or 5-cleft, persistent. *Corolla* tubular-campanulate, or funnel-form; limb 4 or 5-cleft; lobes spreading, erect, or connivent, fringed, or entire, sometimes with intermediate plaits. *Stamens* 4 or 5, included. *Styles* very short. *Capsule* 2-valved, 1-celled.

Herbaceous: leaves opposite, entire, sessile and subconnate; flowers axillary, or terminal, solitary, or fasciculate. *Nat. Ord.* 197. *Lindl.* GENTIANEÆ.

1. G. SAPONARIA, *L.* Stem terete; leaves ovate-lanceolate, acute; flowers axillary and terminal, fasciculate, terminal cluster verticillate-capitate; calyx-segments ovate, shorter than the tube; corolla ventricose, limb somewhat 10-cleft, plicate, connivent, exterior lobes very obtuse. *Beck, Bot. p.* 239. Icon, *Bart. Am.* 3. *tab.* 79. Not? of *Mx.*

SOAP-WORT GENTIANA. *Vulgò*—Gentian, Soap-wort Gentian.

Root perennial. *Stem* 1 to 2 feet high, simple, erect, smooth. *Leaves* about 3 inches long, and an inch wide, closely sessile, and subconnate by a sheathing membrane, 3-nerved, very smooth, scabrous on the margin. *Flowers* large, sessile, principally in a dense termiual verticillate fascicle, with bract-like leaves at base; those below axillary, or in few-flowered and often pedunculate fascicles. *Calyx* 5-cleft; tube about half an inch long; segments lance-ovate, acuminate, minutely ciliate, half the length of the tube. *Corolla* bright blue, paler or nearly white in the folds, about 2 inches long, swelling above the middle, but contracted or plaited, and nearly closed, at summit; outer lobes very short, obtuse, inner ones plicate, lacerate-serrate. *Stamens* much shorter than the corolla; *filaments* broad, lanceolate; *anthers* erect, sagittate. *Stigmas* lance-oblong, diverging, or recurved. *Capsule* oblong, acuminate, tapering at base, covered with the marcescent corolla. *Seeds* numerous, margined,—or rather imbedded in a flat ovate-lanceolate reticulate-striate spongy arillus-like envelope.

Hab. Low grounds; margins of swampy rivulets: frequent. *Fl.* Sept. *Fr.* Nov.

Obs. A handsome plant. The root, as in all the genus, is bitter and tonic.

2. G. OCHROLEUCA, *Froelich.* Stem subangular, leaves lanceolate, elliptic, and obovate, acute, or obtuse; flowers mostly in terminal subsessile fascicles; calyx-segments linear-lanceolate, longer than the tube; corolla campanulate-ventricose, limb somewhat 10-cleft and plicate, exterior lobes ovate, acute. *Beck, Bot. p.* 239.
G. Saponaria. *Mx? Am.* 1. *p.* 176. Not of *Linn.*
Also ? G. villosa. *Willd. Sp.* 1. *p.* 1338.

OCHROLEUCOUS, OR YELLOWISH-WHITE GENTIANA.

Root perennial. *Stem* 9 to 12 or 15 inches high, simple, erect, slightly ridged, or angled, by the decurrence of the leaves; angles minutely scabrous. *Leaves* 1 or 2 to 4 inches long, and half an inch to an inch and half wide, varying from lanceolate and acute, to elliptic, obovate, and obtuse, indistinctly 3-nerved, subcoriaceous, smooth. *Flowers* mostly in a terminal bracteate fascicle, smaller than the preceding. *Calyx* 5-cleft; tube about half an inch long; segments linear-lanceolate, about 3 fourths of an inch long. *Corolla* yellowish white, tinged with pale green, and sometimes purplish blue, about an inch and a half long, subcampanulate; outer lobes ovate, acute, entire, inner ones plicate, serrate-dentate. *Stamens* one third shorter than the corolla; *filaments* flat, lanceolate; *anthers* erect, sagittate. *Stigmas* lance-linear, elongated, erect. *Capsule* lance-oblong, acute, striate, or rugosely grooved, when young. *Seeds* flat, lance-ovate, margined.

Hab. Fields and woodlands: Londongrove: not common. *Fl.* Sept. *Fr.* Novem.

Obs. This species, which is somewhat rare in Chester County, was detected by Dr. EZRA MICHENER, in 1828. It has also been found on the Mica-slate hills, North of West Chester, by Mr. JOSHUA HOOPES, and JOHN RUTTER, Esq. I have received a specimen from the District of Columbia, from my friend Dr. BREBETON, of the United States Army, with coriaceous lance-linear leaves, the margins and

also the calyx-segments, minutely serrulate-ciliate. Dr. B. sent it under the name of *G. Saponaria*. I also have it from Prof. SHORT, of Kentucky, with lanceolate coriaceous leaves, the margins entire and somewhat revolute. These *varieties*, however, are all clearly referable to *G. ochroleuca*.

3. G. CRINITA, *Froelich*. Stem terete, branched; branches elongated, 1-flowered; leaves lanceolate, acute; calyx quadrangular, 4-cleft; corolla 4-cleft, lobes cuneate-obovate, incised-ciliate; stamens 4. *Beck, Bot. p.* 240. Icon, *Bart. Am.* 3. *tab.* 80.

HAIRED, OR FRINGED GENTIANA. *Vulgò*—Fringed Gentian.

Root biennial? *Stem* 1 to 2 feet high, erect, terete, smooth, branched; branches opposite, axillary, erect, 4-angled, and slightly winged. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to an inch wide, very smooth, closely sessile, and rounded, or subcordate, at base, the lower ones sometimes oblanceolate. *Flowers* large, on long naked peduncles, or rather terminating the branches. *Calyx* subcampanulate, about half as long as the corolla, acutely 4-angled, the angles winged; 2 of the segments broader, ovate; the other two a little longer, lanceolate. *Corolla* bright blue, about 2 inches long, subcampanulate; lobes a little spreading, beautifully fringed around the summit and upper part of the sides; the tube with 4 brown glandular spots at base. *Stamens* half the length of the corolla; *filaments* broad, lanceolate; *anthers* incumbent. *Ovary* acuminated by the short united styles; *stigmas* compressed, roundish-ovate, mostly erect. *Capsule* lance-oblong, tapering to a pedicel at base. *Seeds* oblong, brownish, hispid, or echinate.

Hab. Hilly open woodlands: old fields: frequent. *Fl.* Sept.—Octo. *Fr.* Nov.

Obs. This is one of our most beautiful autumnal flowering plants. It is often so late that many of the flowers are overtaken and destroyed by the frost. Authors generally describe it as a *biennial*. *Eaton* says *perennial*. I have not had an opportunity to verify the fact; but I have a suspicion that it is an *annual*. Seven or eight additional species are enumerated in the U. States.

127. CUSCUTA. *L. Nutt. Gen. Append.*

[A name of obscure derivation and uncertain meaning.]

Calyx 4 or 5-cleft. *Corolla* subglobose-campanulate, 4 or 5-cleft, mostly with as many scales at base opposite the clefts, marcescent. *Stamens* 4 or 5, inserted on the corolla at the clefts. *Capsule* circumscissed, or opening all round, at base, 2-celled; cells 2-seeded.

Herbaceous: parasitic; stem filiform, leafless, twining against the sun: flowers clustered. *Nat. Ord.* 199. *Lindl.* CONVOLVULACEÆ.

1. C. AMERICANA, *L.* Flowers pedunculate, in subumbellate clusters, 5-cleft; styles erect; stigmas capitate. *Beck, Bot. p.* 249.

AMERICAN CUSCUTA. *Vulgò*—Dodder. Love-vine.

Annual. *Stem* 2 to 3 or 6 feet long, slender, fleshy, smooth, orange-colored, branching, leafless, or with mere minute scales, twining round other plants, and attaching itself by radicating processes, or tubercles,—when it dies at the root, and loses its direct connection with the earth. *Flowers* on short peduncles, in numerous dense subumbellate racemes. *Calyx-segments* ovate, obtuse. *Corolla* yellowish white, subcampanulate; lobes lance-ovate, rather acute and spreading. *Scales* adnate to the base of the corolla below the stamens, oblong, laciniate, or fringed on the margin. *Stamens* alternate with, and shorter than the lobes of the corolla. *Styles* erect, a little distant, as long as the corolla; *stigmas* capitate. *Capsule*

roundish ovoid, about one eighth of an inch in diameter. *Seeds* rather large, roundish, concave on one side, light brown, roughish-tuberculate, under a lens.

Hab. Moist low grounds: along rivulets: frequent. *Fl.* Aug. *Fr.* Octo.

Obs. This singular parasite seizes upon any herbaceous plant which may be within its reach;—but it is most usually found in localities where the *Impatiens*, *Lycopus*, *Bœhmeria*, and *Mentha viridis*, occur. Its filiform naked stems have some resemblance to brass, or copper wire, and twine constantly against the apparent course of the sun,—or *West South East.*

2. C. EUROPÆA? *L.* Flowers sessile, in dense capitate clusters, 4 or 5-cleft; stamens 4 or 5; styles divaricate; stigmas acute. *Beck, Bot. p.* 250.

EUROPEAN CUSCUTA. *Vulgò*—Flax-vine. Dodder. Devil's guts. *Gallicè*—Fil de terre. *Germanicè*—Die Flachsseide.

Annual. *Stem* 2 to 3 or 4 feet long, filiform, smooth, leafless, twining, reddish orange color. *Flowers* in small dense heads. *Calyx-segments* 4 or 5, ovate, rather acute. *Corolla* yellowish white, or pale orange color, subglobose-urceolate, 4 or 5-cleft; lobes ovate, acute, somewhat spreading. *Scales* adnate to the corolla below the stamens, short, truncate, crenate-laciniate, (without scales at the base of the stamens, *Torr.*). *Styles* diverging; *stigmas* acute. *Capsule* depressed-globose. *Seeds* reddish brown, distinctly scabrous, almost muricate, under a lens.

Hab. Cultivated grounds: chiefly among Flax: not common. *Fl.* June. *Fl.* July.

Obs. This foreigner has always passed, here, for C. *europæa;* but upon examination it seems to agree rather better with the description of C. *Epithymum.* It is certainly often furnished with the *scales* below the stamens It was formerly frequent, and very injurious to Flax crops,—often entangling and spoiling whole lots of it: but since the culture of flax has declined, it is becoming rare. No other species are known in the U. States.

† † *Fruit a Follicle: often in pairs.*

128. APOCYNUM. *L. Nutt. Gen.* 238.

[Greek, *Apo*, far from, *Kyon*, a dog; being supposed destructive of that animal.]

Calyx 5-parted. *Corolla* campanulate, 5-cleft. *Stamens* included; *anthers* sagittate, connivent, cohering to the stigmas by the middle; *filaments* short, inserted on the corolla near its base, and alternating with 5 ovate tooth-like glands. *Ovaries* 2; *styles* obsolete; *stigmas* connate, thickish, flatted, acute at apex. *Follicles* long, sub-linear. *Seeds* linear, comose.

Herbaceous, or frutescent: lactescent; leaves opposite, entire; flowers subcymose, or paniculate, terminal, or axillary. *Nat. Ord.* 196. *Lindl.* APOCYNEÆ.

† A. ANDROSÆMIFOLIUM, *L.* Leaves ovate; cymes few-flowered; tube of the corolla longer than the calyx; limb spreading. *Beck, Bot. p.* 233.

ANDROSÆMUM-LEAVED APOCYNUM. *Vulgò*—Dog's-bane.

Root perennial. *Stem* 2 to 3 feet high, herbaceous, smooth, purple, erect, with spreading branches. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, mostly ovate, acute, mucronate, with the base obtuse or rounded, smooth above, generally more or less pubescent beneath; *petioles* about one fourth of an inch long. *Flowers* cymose; cymes mostly terminal, rather few-flowered; pedicels

with subulate *bracts* at base. *Calyx-segments* lance-ovate, acute, about half as long as the tube of the corolla. *Corolla* pale red, or reddish white with purple stripes, campanulate, with 5 ovate acuminate membranaceous scales adnate to the inner surface of the tube, near the base, with the points free; limb spreading; lobes lance-ovate, rather acute, recurved. *Ovaries* distinct, surrounded at base by 5 ovate rather obtuse flatted tooth-like glands; *stigmas* united into *one*, large, fleshy and dilated. *Follicles* about 4 inches long, terete, slender, smooth, attenuated at apex. *Seeds* imbricated, about one fourth of an inch long, brown, linear, very narrow, somewhat compressed, acute at base, truncate at apex, crowned with a long white silky pappus.

Hab. Borders of woods; fence-rows, &c. frequent. *Fl.* June. *Fr.* Sept.

Obs. This is commonly described as having the leaves smooth on both sides; but I have rarely found them so. They are sometimes quite hoary-pubescent beneath,—and somewhat variable also in form.

2. A. CANNABINUM, *L.* Leaves lanceolate, or lance-oblong, acute at each end; cymes paniculate, many-flowered; calyx as long as the tube of the corolla; limb erect. *Beck, Bot. p.* 234.

HEMP APOCYNUM. *Vulgò*—Indian Hemp.

Root perennial. *Stem* 2 to 4 feet high, herbaceous, erect, smooth, purple, a little glaucous, with rather erect branches. *Leaves* 2 to 4 or 5 inches long, and half an inch to an inch, or inch and half wide, varying from ovate-lanceolate to elliptic, and linear-oblong, acute, or conspicuously mucronate, mostly acute at base, smooth above, more or less pubescent beneath; *petioles* one fourth to half an inch long. *Flowers* numerous, rather smaller than the preceding; *cymes* somewhat paniculate, one frequently dichotomal near the summit; *pedicels* with lance-linear *bracts* at base. *Calyx-segments* lanceolate, acute about as long as the tube of the corolla. *Corolla* mostly greenish white (sometimes tinged with red), campanulate; limb erect; lobes rather obtuse. *Follicles* about as long as the preceding, but more slender.

Hab. Borders of woodlands; Mica-slate hills: not common. *Fl.* Aug. *Fr.* Octo.

Obs. There seems to be several *varieties* which may be referable to this species, and some which appear to be almost intermediate between it and the preceding. In some instances the leaves are quite smooth on both sides,—though they are generally pubescent beneath. I have been much puzzled by some of our specimens, under the impression that the A. *pubescens*, *Br* might be among them; but I cannot find characters enough for more than two species. The bark of this is said to afford a strong fibre, like that of Hemp. One or two additional species have been enumerated in the U. States.

129. ASCLEPIAS. *L. Nutt. Gen.* 243.

[The Greek name of *Æsculapius*; to whom this genus is dedicated.]

Calyx much smaller than the corolla, 5-parted; segments lanceolate. *Corolla* 5-parted; lobes lance-oblong, reflexed. *Lepanthium* (Nectary, *L.*) 5-parted; segments erect, somewhat cucullate, each mostly with an internal subulate incurved process, or little horn. *Antheridium* (connate mass of anthers) 5-angled, pyramidal, truncate, 5-lobed, or opening on the winged angles by 5 longitudinal fissures. *Pollinia* (masses of pollen) 5 distinct pairs, compressed, pyriform, pendulous in the cells of the anthers. *Ovaries* 2, concealed in the tube of the lepanthium, 1 of them mostly abortive. *Follicles* muricate, or unarmed. *Seeds* compressed, margined, imbricated, comose.

Herbaceous, or fruticose: mostly lactescent; leaves entire, opposite, verticillate, or scattered; peduncles terminal, and axillary; flowers in umbels. *Nat. Ord.* 195. *Lindl.* Asclepiadeæ.

§ 1. *Lepanthium with horns.* † *Leaves opposite.* * *Follicles muricate.*

1. A. syriaca, *L.* Stem subsimple; leaves lance-oblong, acute, petiolate, tomentose beneath; umbels subterminal, somewhat nodding; segments of the lepanthium bidentate on the margin. *Beck, Bot. p.* 235.

Syrian Asclepias. *Vulgò*—Silk-weed. Wild Cotton. Swallow-wort.

Stem 3 to 4 feet high, erect, mostly simple, smoothish. *Leaves* 6 to 8 inches long and about 3 inches wide, acute, or with a small acumination, nearly smooth above, whitish tomentose beneath; *petioles* about half an inch long. *Umbels* 2 to 4, axillary near the summit of the stem; *common peduncles* 2 to 3 inches long, stout, pubescent; *pedicels* an inch to an inch and half long, pubescent, with villose lance-linear *bracts* at base. *Flowers* numerous, large, sweet-scented. *Corolla* pale greenish purple. *Lepanthium, Nutt.* (Nectary, *L.* Stamineal crown, *Br. Ell. Torr.* &c.) adnate at base to the *filaments*, forming with them a short tube; segments whitish, fleshy, obtuse, with an acute membranaceous tooth on each inflexed margin; *horns* acute, exserted. *Antheridium, Nutt.* (connate, or syngenesious mass of anthers,) somewhat pyramidal, depressed-truncate, 5-angled, separable into 5 antheroid lobes; each lobe with reflected wing-like rigid margins, adapted to the adjoining ones so as to appear cleft, or with a fissure in the projecting angles,—and terminating at apex in an ovate incurved scarious cusp; *lobes* 2-celled; cells open at summit, each containing a yellow waxy compressed pyriform *pollen mass*, pendulous *in pairs* from a small black shining lance-ovoid sulcate *tubercle* at the apex of the fissure,—and so connected that each pair, suspended by filiform geniculate stipes, occupy the contiguous cells of distinct lobes. *Ovaries* distinct, tapering into short flexuose *styles; stigmas* obscurely lobed. *Follicles* 3 to 5 inches long, and an inch to an inch and a half in diameter, erect on deflected pedicels, ventricose, acuminate, tomentose, armed with flexible spine-like points about one third of an inch long. *Seeds* imbricated, flat, ovate, or pyriform, with a winged margin, crowned with a tuft of long white silky hairs.

Hab. Low grounds, along streams; road sides: frequent. *Fl.* June-July. *Fr.* Sept.

Obs. Much of the detailed description, given above, will apply to the whole genus. All our species of Asclepias have *herbaceous stems*, and *perennial roots*. A very large proportion of the *flowers* are abortive; few of the umbels perfecting more than one or two follicles,—and many of them not one. This is a stout coarse species,—not very common in this vicinity; but abundant in many localities,—particularly on the flats along large streams. It is said that the *Turions*, or young shoots, have been used as a substitute for *Asparagus;* and that Sugar has been obtained from the expressed juice of the flowers.

* * *Follicles unarmed, or not muricate.*

2. A. amœna, *L.* Stem somewhat branched at summit, marked with two longitudinal pubescent lines; leaves elliptic-oblong, acute, or often obtuse, mucronate, pubescent beneath; umbels terminal, erect; segments of the lepanthium entire on the margin; horns gibbous, much incurved, subulate at apex. *Beck, Bot. p.* 235.

A. purpurascens. *Florul. Cestr. p.* 32. Not? of *Linn. and others.*

Pleasing Asclepias.

Stem 2 to 3 feet high, erect, somewhat corymbosely branched above, smoothish, usually with 2 conspicuous pubescent lines. *Leaves* 4 to 6 inches long, and about 2 or 2 and a half inches wide, acute, or often rounded at apex and mucronate, or with a minute abrupt acumination, smoothish above, tomentose-pubescent beneath and on the margin; *petioles* one fourth to half an inch long. *Umbels* numerous, terminating the branches; *common peduncles* 1 to 2 inches long, with densely pubescent lines; *pedicels* near an inch long, often pubescent in lines. with subulate *bracts* at base. *Corolla* deep purple. *Lepanthium* pale red; segments ovate-oblong, obtuse, obscurely hastate at base, twice as long as the antheridium, margin entire; *horns* curved nearly at right angles, somewhat gibbous at the curve, apex very acute, exserted. *Angles* or wings of the *antheridium* prominent, acute, or triangularly produced. *Follicles* 4 or 5 inches long, and about 3 fourths of an inch in diameter, somewhat ventricose, with a slender acumination, pubescent.

Hab. Fence-rows; old fields: frequent. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. I am now satisfied that this is the plant which, at the suggestion of Mr. *Schweinitz*, was called A. *purpurascens*, in my Catalogue,—a species with which I am unacquainted; if, indeed, it be distinct from the present one.

3. A. OBTUSIFOLIA, *Mx.* Stem simple; leaves ovate-oblong, obtuse, sessile, subcordate and amplexicaul, undulate, smooth, glaucous beneath; umbel terminal, long-pedunculate, mostly solitary; segments of the lepanthium truncate, dentate at summit; horns falcate. *Beck, Bot. p.* 236.

OBTUSE-LEAVED ASCLEPIAS.

Stem 2 to 3 feet high, erect, smooth. *Leaves* 4 or 5 inches long, and 2 to 3 inches wide, sometimes rather acute, generally obtuse or rounded at apex, and often emarginate, mucronate, undulate on the margin, closely sessile and somewhat cordate or auriculate at base. *Umbel* terminating the stem, on a naked peduncle 6 or 8 inches long, many-flowered; *pedicels* about an inch long, slender, sulcate, pubescent on one side, with lance-linear ciliate *bracts* at base. *Corolla* greenish purple. *Lepanthium* purple; segments dilated, the margins infolded, entire, with a duplicature, or adnate scale, near the base, the apex truncate, somewhat 5-toothed, the two lateral teeth lanceolate, acuminate; *horns* longer than the segments, laterally compressed, incurved or falcate, acuminate, often obscurely dentate on the back of the curve. *Follicles* 4 or 5 inches long, and about 3 fourths of an inch in diameter, lanceolate, acuminate, smoothish.

Hab. Dry hills; Mica-slate range: not common. *Fl.* June-July. *Fr.* Aug.-Sept.

Obs. This species is not often to be met with, except on our Mica-slate hills,—where it is pretty frequent. It is very common among the Pines of New Jersey; but not generally of so large a growth as with us.

4. A. VARIEGATA, *L.* Stem subsimple; leaves ovate, or oval, petiolate, smooth; umbels subterminal, on rather short peduncles; peduncles and pedicels tomentose; segments of the lepanthium roundish; horns broad-falcate. *Beck, Bot. p.* 236.
A. hybrida. *Mx. Am.* 1. *p.* 115. Also, *Pers. Syn.* 1. *p.* 275.

VARIEGATED ASCLEPIAS.

Stem 2 to 3 feet high, erect, often with a short divaricate or horizontal branch at summit, somewhat pubescent in lines. *Leaves* 3 to 5 or 6 inches long, and from 2 to 3 and a half inches wide, varying from ovate to oval and obovate, mostly rather acute, and mucronate, the lower ones sometimes rounded and emarginate, somewhat glaucous beneath, slightly pubescent on the midrib and margin; *petioles*

half an inch to 3 quarters in length. *Umbels* 1 to 3 or 4, rather dense-flowered; *common peduncles* half an inch to an inch and half long, often corymbose; *pedicels* half an inch to 3 quarters long, hoary-pubescent, with minute setaceous *bracts* at base. *Corolla* greenish externally, white within, with a tinge of purple at base. *Lepanthium* white, purple at base; segments roundish-ovate, a little contracted at base, the infolded margin loosely plicate; *horns* flat, broad, falcate or almost lunate, with an abrupt slender acumination. *Antheridium* variegated, purple and white. *Follicles* 4 to 5 inches long, and near 3 quarters of an inch in diameter, lanceolate, acuminate, pubescent.

Hab. Hilly woodlands; Mica-slate hills: frequent. *Fl.* June-July. *Fr.* Septem.

Obs. This is a handsome plant,—worthy of a place in the flower garden,—as, indeed, are most of the species.

5. A. PHYTOLACCOIDES, *Lyon.* Stem simple; leaves broad-lanceolate, acuminate, petiolate, smooth above, paler and somewhat pubescent beneath; umbels loose, mostly lateral, on long peduncles; segments of the lepanthium truncate, the inflexed margins bidentate at summit; horns much exserted, subfalcate. *Beck, Bot. p.* 235.

A. exaltata (acuminata). *Muhl. Catal. p.* 28.

PHYTOLACCA-LIKE ASCLEPIAS. *Vulgò*—Poke-leaved Swallow-wort.

Stem 3 to 4 feet high, rather slender, striate, somewhat pubescent in lines. *Leaves* to 9 inches long, and 3 to 4 or 5 inches wide, ovate or elliptic-lanceolate, acute at each end; *petioles* about half an inch long. *Umbels* mostly lateral, sometimes terminal also, rather lax; *common peduncles* 2 to 3 inches long, pubescent on one side; *pedicels* an inch to an inch and half long, slender, flaccid, pubescent, with subulate-linear *bracts* at base. *Corolla* greenish white. *Lepanthium* whitish, with a tinge of purple at base; segments thin and membranous, truncate, obscurely repand-toothed, the margins folded in, with two acute teeth at the summit of each margin, the outer one larger; *horns* longer than the segments, linear-lanceolate, acuminate, slightly incurved. *Antheridium* whitish, tinged with purple; the angles or wings obtusely produced at base. *Tubercle* connecting the pollen masses rather large, ovate, narrowed and notched at base, with a central groove in front, purplish black, shining. *Follicles* 4 to 6 inches long, and 3-fourths of an inch in diameter, lanceolate, acuminate, minutely pubescent.

Hab. Birmingham; Mica-slate hills: frequent. *Fl.* June—July. *Fr.* Sept.

Obs. Although not very common, this fine species is more frequent than I formerly supposed. The leaves have a striking resemblance to those of *Phytolacca*.

6. A. LAURIFOLIA, *Mx.* Stem simple; leaves ovate-lanceolate, acuminately tapering towards the apex, very acute, subcordate, or often rounded at base, subsessile, somewhat distant, smooth; umbels on long peduncles, mostly terminal; segments of the lepanthium rather acute, obtusely sinuate-bidentate on the margin; horns scarcely as long as the segments. *Beck. Bot. p.* 236

A. periplocæfolia. *Nutt. Gen.* 1. *p.* 167. *Eat. Man. p.* 32.

Also, A. acuminata. *Pursh, Am.* 1. *p.* 182. *Torr. Fl.* 1. *p.* 283. *Ejusd. Comp. p.* 126. *Beck, Bot, p.* 236.

LAURUS-LEAVED ASCLEPIAS.

Root a rounded tuber. *Nutt. Stem* 1 and a half to 2 feet high, erect, slender, smooth, with a pubescent line on one side. *Leaves* 3 to 5 inches long, and one to two inches wide, in distant pairs, remarkably tapering to a point, smooth on both

sides, scabrous-ciliate on the margin, subsessile, or on petioles scarcely 1 fourth of an inch long, the upper ones often quite sessile. *Umbel* mostly solitary and terminal, sometimes 1 or 2 additional, subterminal; *common peduncle* 2 to 3 inches long, pubescent on one side; *pedicels* about an inch long, pubescent on one side, with subulate *bracts* at base. *Corolla* yellowish green externally, purple within. *Lepanthium* purple, tinged with greenish orange; segments lance-oblong, abruptly narrowed at base, nearly as long as the corolla, the infolded margin with an obtuse tooth on each side near the base; *horns* subterete, gradually tapering to a point, slightly incurved, nearly as long as the segments. *Follicles* 3 to 4 inches long, and 2 thirds of an inch in diameter, ventricose, acuminato, nearly smooth.

Hab. N. Valley hill, near Gunkle's, & Brooke's Mill: rare. *Fl.* July–Aug. *Fr.* Sept.

Obs. This neat pretty species is quite rare with us; and has only been found in the above locality,—where it was collected by D. Townsend, Esq. in 1830.

7. A. INCARNATA, *L.* Stem branched above; leaves lanceolate, smoothish, or tomentose-pubescent, on short petioles; umbels numerous, terminal and subterminal, erect, generally in oposite pairs; segments of the lepanthium entire; horns subulate, exerted. *Beck, Bot. p.* 235. A. pulchra. *Bigel. Bost. p.* 103. Also, *Willd. Sp.* 1. *p.* 1267. *Muhl. Catal. p.* 28. *Bart. Phil.* 1. *p.* 132. *Lindl. Ency. p.* 198. *Eat. Man. p.* 32.

Flesh-colored Asclepias.

Stem 2 to 3 or 4 feet high, erect, with alternate or opposite axillary upright and somewhat corymbose branches towards the summit, smoothish with pubescent lines, or coarsely tomentose-pubescent. *Leaves* 3 to 6 inches long, and half an inch to an inch or inch and half wide, very acute, often obtuse and almost truncate at base, smoothish, or hairy; *petioles* one fourth to half an inch long. *Umbels* rather small, numerous, and chiefly terminal; *common peduncles* 1 to 2 inches long, pubescent, often densely so; *pedicels* half an inch to 3 quarters in length, pubescent, with lance-linear ciliate-pubescent caducous *bracts* at base. *Calyx-segments* lanceolate, pilose. *Corolla* bright purple; lobes lanceolate, often minutely emarginate. *Lepanthium* palish purple, or flesh colored; tube somewhat elongated; segments oblong-ovate, obtuse, about as long as the antheridium; *horns* longer than the segments, slightly incurved. *Follicles* about 3 inches long, and half an inch in diameter, ventricose, acuminate, pubescent.

Hab. Moist low grounds, and swamps: frequent. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. This varies much in the degree of pubescence, and likewise in the brightness or intensity of its purple flowers; but I can perceive nothing to authorize a *specific* distinction.

8. A. QUADRIFOLIA, *Jacq.* Stem simple; leaves lance-ovate, acuminate, smooth, petiolate, 4 larger ones in a verticil near the middle of the stem; umbels terminal, erect, loose; segments of the lepanthium long, bidentate on the margin; horns short, scarcely exserted. *Beck, Bot. p.* 236. Icon, *Bart. Im.* 2. *tab.* 43.

Four-leaved Asclepias.

Root horizontal, oblong, yellowish. *Stem* 18 inches to 2 or 3 feet high, erect, slender, smooth, with a pubescent line. *Leaves* 2 to 5 inches long, and 1 to 2 inches wide, the upper and lower ones opposite, the middle ones cruciate, or in a verticil of 4, all thin and membranaceous palor beneath, somewhat pilose on the midrib nerves and margin; *petioles* one fourth to half an inch long, slightly ciliate, and winged by the decurrence of the leaves. *Umbels* mostly 2, sometimes solitary;

Common peduncles 1 to 2 or 3 inches long, (when elongated, often bearing a pair of small lance-oblate leaves), slender, pubescent; *pedicels* about an inch long, flaccid, pubescent on one side, with minute subulate caducous *bracts* at base. *Calyx-segments* ovate-lance-late, smooth, one of them sometimes setaceous. *Corolla* white. *Lepanthium* whitish, with a tinge of purple at base, segments linear-oblong, obtuse, more than twice as long as the antheridium, the inflexed margin with an acute tooth on each side near the base; *horns* subfalcate, about half as long as the segments. *Follicles* 3 to 5 inches long, and about one fourth of an inch in diameter, lanceolate-acuminate, smooth.

Hab. Rich woodlands, and fence-rows: frequent. *Fl.* May—June. *Fr.* Aug.

†† *Leaves verticillate, or alternate.*

9. A. VERTICILLATA, *L.* Stem subsimple, pubescent in lines; leaves narrow-linear, revolute or reflexed on the margin, smoothish, mostly verticillate, sessile; umbels terminal and axillary; tube of the lepanthium conspicuous, segments short, very obtuse, with a tooth at the summit of each margin; horns falcate, much exserted. *Beck, Bot. p.* 236.

VERTICILLATE ASCLEPIAS.

Stem 1 to 2 feet high, nearly erect, sometimes decumbent at base, slender, marked with several pubescent lines. *Leaves* about 2 inches long, and scarcely a line wide, abruptly acute, the margins revolute, or often flatly folded back, mostly verticillate, rather crowded below, sometimes in semiverticils, or opposite, near the summit of the stem. *Umbels* several, rather small, terminal and subterminal, often verticillate in the upper axils; *common peduncles* half an inch to an inch long, slender, pubescent on one side; *pedicels* about half an inch long, pubescent, with subulate-linear *bracts* at base. *Flowers* small. *Corolla* greenish white, with tinges of purple. *Lepanthium* white; tube elongated; segments scarcely as long as the antheridium, a little spreading, broad and obtuse, each margin extended into an acute tooth at summit; *horns* about twice as long as the segments, incurved. *Antheridium* cinereous, or greyish white, with tinges of green. *Follicles* about 2 inches long, and one fourth of an inch in diameter, somewhat ventricose, acuminate, smooth.

Hab. Sterile hills; Serpentine ridges: frequent. *Fl.* July. *Fr.* Sept.

Obs. This species is pretty much confined to the sterile banks of Serpentine rock,—where it is quite plentiful.

10. A. TUBEROSA, *L.* Hirsute; not lactescent; stem erect, oblique, or decumbent, with spreading branches; leaves lance-oblong, mostly alternate, subsessile; umbels numerous, terminal and axillary, often forming corymbs; segments of the lepanthium obtusely bidentate on the margin. *Beck, Bot. p.* 237.

Also, A. decumbens. *Willd. Sp.* 1. *p.* 1268. *Pers. Syn.* 1. *p.* 276.

TUBEROUS ASCLEPIAS. *Vulgò*—Pleurisy-root. Butterfly-weed.

Whole plant mostly very hairy. *Root* large, tuberous. *Stem* about 2 feet high, generally more or less oblique; branches spreading, and often recurved. *Leaves* 2 to 4 inches long, and half an inch to an inch wide, mostly alternate, sometimes opposite, varying from lance-linear to oblong and oblanceolate, acute or obtuse, obscurely mucronate, mostly obtuse at base; *petioles* very short. *Umbels* often corymbosely arranged on the curved branches, on *common peduncles* generally half an inch to an inch long, sometimes nearly or quite sessile; *pedicels* about 3 fourths

of an inch long, with subulate *bracts* at base. *Corolla* greenish orange. *Lepanthium* bright orange-color; segments erect, lance-oblong, distinct, abruptly and acutely narrowed at base, twice as long as the antheridium, the infolded margin with an obtuse tooth on each side near the base; *horns* subterete, tapering gradually to a point, slightly incurved, nearly as long as the segments. *Antheridium* greyish orange, tinged with green. *Follicles* about 4 inches long, and half an inch to three quarters in diameter, somewhat ventricose, acuminate, tomentose-pubescent.

Hab. Sandy old fields; along fence-rows: frequent. *Fl* July-Aug. *Fr.* Sept.-Oct

Obs. The A. *decumbens*, *Willd.* is very properly, I think, reduced to a *variety* of this. The *root* is possessed of some medicinal properties; and has been quite popular as a remedy for Pleurisy, Dysentery, &c but it is not much attended to, of late. This is the only species, with us, which is *not lactescent*.

§ 2. *Lepanthium without horns: Leaves opposite: Follicles unarmed.*

11. A. VIRIDIFLORA, *Raf.* var. *obovata, Torr.* Stem simple, tomentose; leaves oval, ovate, and obovate, tomentose-pubescent on both sides, on very short petioles; umbels subterminal, solitary, subsessile, nodding. *Beck, Bot. p.* 237.

A. nutans. *Muhl. Catal. p.* 28.

Acerates viridiflora. *Eat. Man. p.* 2.

GREEN-FLOWERED ASCLEPIAS.

Stem 1 to 2 feet high, erect, tomentose-pubescent. *Leaves* 2 to 3 inches long, and 1 to 2 and a half inches wide, varying from ovate to oval, roundish, and obovate, often conspicuously emarginate, mucronate, thick and coriaceous; *petioles* scarcely one fourth of an inch long. *Umbels* 2 to 3 or 4, axillary, subterminal, subglobose, dense-flowered, cernuous, on very short thick peduncles; *pedicels* about half an inch long, villose, with linear-lanceolate tomentose *bracts* at base. *Corolla* pale green. *Lepanthium* greenish white; segments without horns, distinct, lance-oblong, obtuse, erect, a little shorter than the antheridium, the margin with a membranaceous rather oblique and obtuse tooth, which seems to be adnate to it on each side, near the base,—each segment alternating with a small spatulate process opposite the base of the angles or wings of the antheridium. *Follicles* 3 or 4 inches long, and about 3 fourths of an inch in diameter, ventricose, acuminate, tomentose-pubescent.

Hab. Great Valley; limestone bank, near Brooke's Mill: rare. *Fl.* July. *Fr.* Sept.

Obs. This plant differs in some striking characters from its congeners; but its general resemblance is so strong, that it can hardly make more than a sub-genus. It is rare in this County,—having only been found, as yet, in the above locality. The *var. lanceolata, Torr.* I have seen at Easton, Penna. growing also on limestone banks. Eight or nine additional species have been enumerated in the U States.

D. *Corolla pentapetalous.*

130. HEUCHERA. *L. Nutt. Gen.* 252.

[Named in honor of *John Henry Heucher*; a German Botanist.]

Calyx persistent, mostly 5-cleft. *Petals* small, inserted on the calyx at the clefts. *Styles* 2, distinct, long, persistent. *Capsule* birostrate, adnate to the calyx below, opening between the beaks, 1-celled, many-seeded.

Herbaceous: leaves radical, on long petioles, palmate-nerved, sub-lobed, dentate; scape mostly leafless; flowers in a terminal paniculate bracteate raceme. *Nat. Ord.* 38. *Lindl.* SAXIFRAGEÆ.

1. H. AMERICANA, *L.* Viscid-pubescent, somewhat scabrous; leaves roundish-cordate, somewhat 7-lobed, crenate-dentate, teeth dilated, mucronate; raceme thyrsoid, elongated; peduncles di- or tri-chotomous, divaricate; calyx short, obtuse; petals lance-obovate, scarcely as long as the calyx; stamens much exserted. *Beck, Bot. p.* 139.
H. cortusa. *Mx. Am.* 1. *p.* 171.
H. viscida. *Pursh, Am.* 1. *p.* 187.

AMERICAN HEUCHERA. *Vulgò*—Alum-root. American Sanicle.

Root perennial. *Leaves* all radical, 1 to 4 inches in length, and as wide as long, somewhat hispidly pilose; *petioles* 2 to 8 or 10 inches long. *Scape* erect 2 to 4 feet high, (often 2 or 3 from the same root,) somewhat scabrous and glandular-hispid. *Raceme* 6 to 12 or 15 inches long, thyrsoid, or paniculate, glandular-pubescent; *peduncles* half an inch to an inch or more in length, dichotomous or often subdivided in threes; *bracts* subulate, ciliate. *Calyx* subturbinate, often more than 5-cleft; segments obtuse. *Petals* whitish, with a tinge of purple, very small, lance-obovate, or spatulate, alternating with and rather shorter than the calyx-segments. *Stamens* unequal, at first short, finally much longer than the calyx, inserted on the calyx opposite the segments. *Styles* nearly as long as the stamens, at length diverging. *Capsule* ovoid, acuminate, birostrate with the persistent styles, 1-celled, opening between the beaks. *Seeds* small, oblong, nearly black, muricate, or hispid.

Hab. Rich woodlands; fence-rows, &c. frequent. *Fl.* May—June. *Fr.* Aug.

Obs. The *root* of this is considerably astringent; and is one of the *Indian remedies* reputed to cure cancers and other ill-conditioned ulcers. It is doubtless of some value, if properly employed. Seven other species are enumerated in North America, by *De Candolle, Hooker,* and *Eaton,*—of which 3 or 4 have been found in the U. States. I have received some very large specimens, which are not well determined, from my friend Prof. SHORT, of Kentucky.

§ 2. *Flowers incomplete.*

131. CHENOPODIUM. *L. Nutt. Gen.* 284.
[Greek, *Chen, chenos,* a Goose, & *Pous, podos,* a foot; from the form of the leaves.]

Calyx 5-parted, obtusely 5-angled, persistent, embracing the fruit, but not adhering to it. *Corolla* 0. *Styles* very short, united at base; *stigmas* mostly obtuse. *Utricle* thin, membranaceous. *Seed* 1, vertically depressed, lenticular.

Herbaceous, or suffruticose: leaves mostly alternate, without stipules; flowers glomerate, racemose, or subpaniculate; fruit utricular. *Nat. Ord.* 153. *Lindl.* CHENOPODEÆ.

1. C. AMBROSIOIDES, *L.* Leaves lanceolate, remotely dentate; racemes simple, axillary, leafy. *Beck, Bot. p.* 296.

AMBROSIA-LIKE CHENOPODIUM.

Whole plant yellowish green. *Root* annual. *Stem* 1 to 2 feet high, angular & ridged, slightly pubescent, much branched. *Leaves* 1 to 2 inches long, and one fourth to 3 fourths of an inch wide, acute at each end; those on the stem oblong-lanceolate, repand-dentate, petiolate; those on the branches and racemes lance-linear, mostly entire, subsessile. *Flowers* in interrupted sessile clusters, on slen-

der axillary leafy branches. *Stamens* longer than the calyx. *Seed* small, sub ovate, dark purplish brown, smooth and shining, enclosed in a thin membranaceous sac, or utricle.

Hab. Roadsides; Kimberton; G. Valley: not common. *Fl.* Aug.—Sept. *Fr.* Oct.

Obs. All our Chenopodiums are believed to be introduced,—at least into this region. They are a homely family; and regarded rather as weeds. This species has a strong persistent odor, very similar to that of the worm-seed oil of the shops;—and, I think, is frequently mistaken for the real *C. anthelminticum*. It is by no means common, as yet, in Chester County.

2. C. ALBUM, *L.* Leaves rhomboid-ovate, crose-dentate, entire at base, the upper ones oblong-lanceolate, entire; racemes branched, somewhat leafy. *Beck, Bot. p.* 296.

Also, C. viride. *Willd. Sp.* 1. *p.* 1303. *Pers. Syn.* 1. *p.* 294. *Muhl. Catal. p.* 28.

WHITE CHENOPODIUM. *Vulgò*—Lamb's Quarter. Goose-foot.

Gallicè—Anserine blanche. *Germanicè*—Der Gaensefuss.

Root annual. *Stem* 3 to 5 or 6 feet high, angular, often striped with green and yellow, sometimes purplish, branched. *Leaves* 1 to 3 inches long, and half an inch to 2 inches wide (lower ones often larger), lance-ovate, somewhat rhomboid acute, unequally toothed, entire and more or less tapering at base, covered with minute, flat or cup-like, white scales, especially on the under surface, which give them a glaucous or mealy appearance; upper leaves smaller, lanceolate, entire; *petioles* 1 to 2 or 3 inches long. *Flowers* in clusters, pulverulent; racemes branched, the terminal ones often forming a large panicle, and nearly leafless. *Calyx* depressed, 5-angled by the prominent keels of the incurved segments. *Seed* dark purple, or nearly black, lenticular, slightly cochleate, or with a small notch on one side, smooth and shining.

Hab. Gardens; yards, and waste places: common. *Fl.* July—Aug. *Fr.* Oct.

Obs. The C. *viride*, *L.* with greener leaves, is properly reduced to a *variety* of this. It is also frequent, here. This is a rank troublesome weed in our gardens, wood-yards, &c. The young plants are sometimes cooked, as *greens*, in the spring.

3. C. RHOMBIFOLIUM? *Muhl.* Leaves triangular-rhombic, acute, sinuate-dentate; upper ones lanceolate, dentate, cuneate at base; racemes axillary, erect, mostly leafless; bracts minute, incurved. *Beck, Bot. p.* 295.

RHOMBUS-LEAVED CHENOPODIUM.

Plant yellowish green. *Root* annual. *Stem* 1 to 2 feet high, angular, striped with deeper green, branched. *Leaves* 1 to 3 inches long, and half an inch to an inch and a half wide at base, acutely sinuate-toothed; *petioles* half an inch to an inch long. *Flowers* small, in interrupted, oblong, or capitate clusters, on slender axillary and mostly leafless branches, often with minute incurved *bracts* at the base of the clusters; *racemes* generally longer than the petioles (shorter, *Torr.*)

Hab. Great Valley; White Horse Tavern: rare. *Fl.* June—July. *Fr.*

Obs. I am not quite certain of this species; but it agrees pretty well with a specimen received, by that name, from Mr. *Schweinitz*. It was collected in the above locality in 1829, by D. TOWNSEND, Esq. I have not seen the mature fruit.

4. C. ANTHELMINTICUM, *L.* Leaves lance-oblong, acute, dentate; racemes axillary and terminal, long, slender, leafless. *Beck, Bot. p.* 296.

WORM-DESTROYING CHENOPODIUM. *Vulgò*—Worm-seed.

Plant pale green. *Root* perennial. *Stem* 2 to 3 or 4 feet high, angular, grooved, branched. *Leaves* 1 to 2 or 3 inches long, and half an inch to an inch wide, repand-dentate, sometimes rather incised-dentate, cuneate at base, sprinkled with resinous dots beneath; *petioles* one fourth to three fourths of an inch long. *Flowers* in long slender interrupted naked racemes, or spikes; clusters small. *Calyx* smoothish, green. *Stamens* longer than the calyx. *Styles* 3, united at base.

Hab. Roadsides; Boot-tavern; gardens: rare. *Fl.* July. *Fr.* Sept.—October.

Obs. This is quite rare, here,—and scarcely naturalized; but is sometimes to be met with, in and about gardens. Mr. *Elliott* seems to consider it indigenous, in the South. The plant has a strong disagreeable odor; and yields the well known *worm-seed oil*,—a valuable and powerful vermifuge.

5. C. BOTRYS, *L.* Leaves oblong, sinuate-lobed; racemes axillary and terminal, paniculate, leafless. *Beck, Bot. p.* 296.

Vulgò—Jerusalem Oak. Feather-Geranium.

Root annual. *Stem* 1 to 2 feet high, branched, pubescent; pubescence minutely glandular, and somewhat viscid. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, pinnatifid sinuate, lobes dentate, upper leaves gradually smaller, sinuate-dentate; *petioles* one fourth to 3 fourths of an inch long. *Flowers* in numerous rather short axillary branching glandular-pubescent racemes, the whole resembling a long slender leafy panicle; usually a single sessile flower in the forks of the peduncles. *Seed* small, subcochleate, dark purplish brown.

Hab. Roadsides; North Valley Hill: rare. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. This was collected, in the above locality, by Mr. JOSHUA HOOPES,—and it is sometimes to be met with in gardens; but is quite rare. It is a fragrant plant; but, unlike the C. *ambrosioides*, the odor is dissipated in drying. Mr. *Nuttall* says it is indigenous on the banks of the Missouri and Mississippi.

6. C. HYBRIDUM, *L.* Leaves cordate-ovate, acuminate, angularly toothed; racemes terminal and axillary, large, loosely paniculate, leafless, with the branches divaricate. *Beck, Bot. p.* 296.

HYBRID CHENOPODIUM.

Root annual. *Stem* 2 to 3 feet high (frequently 6 feet, *Bart.*), rather slender, angular and striate, smooth, somewhat branched. *Leaves* 2 to 4 inches long, and 1 to 3 inches wide, conspicuously acuminate, coarsely sinuate-toothed, or angled, rounded or often cordate at base, thin and membranaceous, smoothish, bright green; *petioles* 1 to 2 inches long. *Flowers* paniculate, the subdivisions cymose; terminal panicle long and loose, with divaricate branches. *Seed* rather large, dark purple, or nearly black, lenticular, somewhat cochleate, or with a notch on one side, slightly striate and punctate, shining.

Hab. Bank of the Schuylkill, at Black Rock: rare. *Fl.* June. *Fr.* Aug.

Obs. This is a rare species, with us. It was collected in the above locality by D. TOWNSEND 4th, in 1830. The larger leaves resemble those of the *Maple*, in form; and the plant is called, in England, *Maple-leaved Goose-foot*. Five or six additional species have been enumerated in the U. States; but the foregoing, I believe, are all that have yet been detected in Chester County.

132. BETA. *L. Gen. Pl.* 436.

[Celtic, *Bett*, red: or from its fruit resembling the Greek letter B (*Beta*).]

Calyx 5 parted, persistent, adhering to the base of the fruit. *Corolla* 0. *Styles* very short, distinct, erect; *stigmas* acute. *Seed* 1, subreniform-cochleate, imbedded in the capsular base of the calyx.

Herbaceous: stem sulcate-angled; leaves alternate; flowers glomerate, in spikes, or paniculate racemes. *Nat. Ord.* 153. *Lindl.* CHENOPODEÆ.

1. B. VULGARIS, *L. Lower leaves ovate; flowers in dense sessile axillary clusters.* Willd. Sp. 1. p. 1368.

COMMON BETA. Vulgò—*Beet. Garden Beet.*

Gallicè—*Bette-rave.* Germ.—*Gemeiner Mangold.* Hisp.—*Acélga.*

Root *biennial, fleshy, large (sometimes 3 or 4 inches in diameter, and more than a foot long), terete, tapering downwards, deep purple, or yellowish.* Stem 2 *to 4 feet high, sulcate-angled, smooth, somewhat paniculately branching.* Lower *or* radical leaves 6 *or* 8 *inches long, and 4 to 6 inches wide, ovate, obtuse, often subcordate at base, undulate on the margin, nerved, smoothish, greenish purple;* petioles 4 *to* 8 *inches long, succulent, purple, channelled on the upper side:* stem leaves *lance-ovate, acute, gradually smaller as they ascend, petiolate.* Flowers *in terminal paniculate interrupted leafy spikes; clusters capitate, sessile in the axils of the small lanceolate leaves.* Calyx *purplish brown, fleshy at base, finally somewhat suberose:* segments *keeled, incurved and subacuminate at apex.* Seed *depressed, cochleate-orbicular, with a beak-like process on one side, loosely farinaceous, enveloped in a purple membrane, and lodged in a bony cell at the base of the calyx.*

Hab. *Gardens, and Lots: common.* Fl *July.* Fr. *Sept.*

Obs. *Very generally cultivated, for its fine esculent* root,—*of which there are several varieties. It is capable of yielding a large portion of Sugar,—and is extensively cultivated for that purpose, on the continent of Europe: But whilst we have the* Sugar Cane, *and the* Sugar Maple, *in our country, it will hardly command attention, in that respect. A large-rooted variety of* B. Cicla, *called* Mangel Wurtzel, *or* Scarcity root, *was brought into notice a few years ago, as a desirable crop for feeding Stock: but it did not take, with our Farmers,—and is scarcely entitled to be enumerated among our cultivated plants. There are no native species in the U. States.*

133. ULMUS. *L. Nutt. Gen.* 287.

[An ancient Latin name; of obscure etymology.]

Calyx small, campanulate, 5 to 8-cleft. *Corolla* 0. *Stamens* 5 to 8. *Samara* 1-celled, 1-seeded, flat; *margin* broad, membranaceous.

Trees, or shrubs: with alternate simple deciduous leaves and stipules; flowers fasciculate. *Nat. Ord.* 79. *Lindl.* ULMACEÆ.

1. U. AMERICANA, *L.* Leaves smooth above, very unequal at base, serratures uncinately acuminate; flowers conspicuously pedicellate, in loose fascicles; samara oval, densely villose-ciliate on the margin. *Beck, Bot. p.* 333. Icon, *Mx. f. Sylva.* 3. *tab.* 126. Not of *Marshall.* U. mollifolia. *Marsh. Arbust. p.* 156.

AMERICAN ULMUS. *Vulgò*—White Elm. Weeping Elm.

Stem 40 to 60 or 80 feet high, and sometimes 2 to 3 feet in diameter; branches long and rather pendulous. *Leaves* 3 to 5 inches in length, and 2 to 3 inches wide, ovate, acuminate, somewhat doubly serrate, remarkably unequal at base.

smooth on the upper surface, pubescent beneath; *petioles* one fourth to half an inch long, smoothish. *Stipules* smooth. *Flowers* in loose lateral fascicles; *pedicels* articulated, filiform, about half an inch long. *Calyx* somewhat obliquely truncate, about 8-cleft, smoothish; tube green; segments purplish brown, short, rounded. *Stamens* mostly 8, exserted. *Styles* pubescent, nearly white. *Samara* about half an inch long, and one third of an inch wide, reticulately veined, smooth, oval, tapering to a pedicel at base, emarginate, or bifid at apex between the two styles, which are adnate to the membranous wing; segments incurved so as to leave an apparent foramen through the wing; margin densely fringed with soft white hairs.

Hab. Brandywine, near Hillsdale Factory, not common. *Fl.* April. *Fr.* June.

Obs. I have met with this species only in the above locality,—where it attains a large size.

2. U. FULVA, *Mx.* Leaves very scabrous above, rather unequal and often somewhat cordate at base; buds clothed with a fulvous tomentum; flowers in dense subsessile fascicles; samara orbicular, naked on the margin. *Beck, Bot. p.* 333.

U. americana. *Marsh. Arbust. p.* 156. Not of *Linn.*

U. aspera. *Muhl. Catal. p.* 29.

U. rubra. *Mx. f. Sylva.* 3. *p.* 89. Icon, *tab.* 128.

TAWNY ULMUS. *Vulgò*—Slippery Elm. Red Elm.

Stem 20 to 30 or 40 feet high; branches virgate. *Leaves* 4 to 6 inches long, and 2 to 3 inches wide, lance-oval, often obovate-oblong, conspicuously acuminate, doubly serrate, the upper surface remarkably scabrous, tomentose-pubescent beneath, especially along the nerves and midrib; *petioles* about 1 third of an inch long, pubescent. *Stipules* pilose. *Flowers* on short pedicels, numerous, in dense lateral clusters. *Calyx* about 7-cleft; segments obtuse, clothed and ciliate with a reddish tawny pubescence. *Stamens* often 7, much exserted; *anthers* dark purple. *Styles* glandular-pubescent, purple. *Samara* orbicular, about half an inch in diameter, radiately veined, pubescent in the centre, on a slender pedicel as long as the calyx; margin smooth, cleft at apex between the styles; segments acuminate by the persistent adnate styles, and so incurved and overlapped as to give the margin the appearance of being entire at apex.

Hab. Rich low grounds: fence-rows: frequent. *Fl.* April. *Fr.* June.

Obs. The inner bark of this species contains a large portion of mucilage, which is occasionally used, in popular practice, as a remedy for Dysentery,—and is probably as good as any other mucilage. During the late war, it is said the military, on the Canada frontier, found it to be a nutritious and grateful food for their horses, in times of scarcity of forage. Two or three additional species are enumerated in the U. States.

134. CELTIS. *L. Nutt. Gen.* 289.

[An ancient name of the *Lotus*: applied to this genus.]

MONOICOUSLY POLYGAMOUS: STAMINATE FL. *Calyx* 6-parted. *Corolla* 0. *Stamens* 6 (*Nutt.*). PERFECT FL. *Calyx* deeply 5-parted. *Corolla* 0. *Stigmas* subulate, elongated, spreading; *styles* short, connate. *Drupe* globose, 1-seeded.

Trees, or shrubs: leaves alternate, simple, mostly oblique at base; flowers axillary. *Nat. Ord.* 79. *Lindl.* ULMACEÆ.

1. C. OCCIDENTALIS, *L.* Leaves obliquely ovate, acuminate; flowers subsolitary; fruit brownish orange-color. *Beck, Bot. p.* 334. Icon, *Mx. f. Sylva.* 3. *tab* 114.

WESTERN CELTIS. *Vulgò*—Nettle tree. Sugar-berry.

Stem 8 to 15 feet high, branching. *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, acuminate, serrate, entire at base, but oblique and rather unequal, more or less scabrous on the upper surface, somewhat pilose beneath, at length coriaceous; *petioles* about 1 third of an inch long, pubescent. *Flowers* axillary, solitary, or sometimes in pairs (lower ones often in threes, *Torr.*); *pedicels* half an inch to 3 quarters in length. *Calyx* dull greenish yellow; segments lance-oblong. *Ovary* smooth, with a tomentose ring at base, beaked by the short thick *style* (or connate styles). *Stigmas* densely pubescent, long, diverging or divaricate, the points often incurved. *Drupe* globose, about 1 third of an inch in diameter, yellowish brown, or brownish orange-color when mature (purple, *Ell.*), minutely punctate; pulpy coat thin, sweetish tasted.

Hab. Great Valley: Brook's Mill: rare. *Fl.* May. *Fr.* September.

Obs. This agrees so well with *Michaux's* figure, that I presume it is the same plant: But, with us, it is rather a large shrub, than a tree. It very much resembles, moreover, some small specimens which I collected on the *Potomac*, above Georgetown,—which Mr. *Schweinitz* pronounced to be C. *pumila*; and hence I have been led to suppose that *Muhlenberg* was correct, in making C. *pumila* a *variety* of C. *occidentalis*.

2. C. CRASSIFOLIA? *Lam.* Leaves obliquely lance-ovate, acuminate, unequal and subcordate at base; flowers often in pairs; fruit black? *Beck, Bot. p.* 334. Icon, *Mx. f. Sylva.* 3. *tab.* 115.

C. cordata. *Pers. Syn.* 1. *p.* 292.

THICK-LEAVED CELTIS. *Vulgò*—Hoop Ash. Hack berry.

Stem 30 to 50 feet high, and 1 to 2 feet in diameter. *Leaves* 3 to 5 inches long, and 2 to near 3 inches wide, tapering gradually towards the apex, acuminate, serrate, serratures acuminate and somewhat uncinate, base somewhat cordate, pubescent-ciliate, unequal, or 1 lobe much produced, pilose on the nerves beneath, upper surface sparingly pilose, and thickly covered with minute grey glandular dots; *petioles* half an inch to two thirds of an inch long, nearly smooth. [*Flowers* often in pairs on a common peduncle. *Fruit* round, about as large as a pea, black when mature. *Mx. f.*]

Hab. Great Valley: near the Warren tavern: rare. *Fl.* *Fr.*

Obs. This is a rare tree with us,—and has only been found, as yet, in the above locality. I am indebted for a knowledge of it to Mr. JOSHUA HOOPES, who detected it in 1828. I have not had an opportunity to observe either the flowers or fruit. There is evidently some confusion respecting these two species. Dr. *Torrey* says this is smaller than the preceding, and scarcely distinct from it: But ours is greatly larger; and if the fruit be *black*, as *Michaux* says, I think it must be specifically different. I have no doubt it is the plant intended by *Michaux*,—as the leaves correspond exactly with his plate; though they are smoother, and actually *thinner* than the full grown leaves of C. *occidentalis*. One or two additional species have been enumerated in the U. States.

B. Ovary inferior: *Corolla pentapetalous:* Flowers in umbels.*

a. *Umbels simple.* † *Fruit succulent, or carnose.*

135. PANAX. *L. Nutt. Gen.* 254.

[Gr. *Pan*, all, & *Akos*, a remedy; an imaginary *panacea*, or universal medicine.]

Dioicously Polygamous: Staminate Fl. *Calyx* small, turbinate; limb nearly entire. Perfect Fl. *Calyx* adnate to the ovary, with the limb short, obsoletely 5-toothed. *Petals* alternate with the teeth of the calyx. *Stamens* inserted under the margin of the epigynous disk, alternating with the petals. *Styles* 2 or 3 (rarely 1). *Fruit* a fleshy, or subcoriaceous berry, 2 or 3-celled; cells 1-seeded.

Herbaceous, or fruticose: stem of the herbaceous species simple, terminating verticillately in three compound leaves, with a solitary central pedunculate umbel. *Nat. Ord.* 1. *Lindl.* Araliaceæ.

1. P. quinquefolium, *L.* Root fusiform, subramose; leaflets quinate-digitate, obovate, acuminate, petiolate; peduncle of the umbel rather shorter than the common petioles; styles 2; fruit succulent, 2-seeded. *Beck, Bot. p.* 152.

Five-leaved Panax. *Vulgò*—Ginseng.

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* The plants of this division, with the exception of *Panax* (and even that is very nearly related), constitute a perfectly *natural* assemblage. *Nat. Ord.* 2. *Lindl.* Umbelliferæ. They are mostly *herbaceous*; the *stems* fistular, and often furrowed; the *leaves* alternate, sometimes simple, but generally compound, or much dissected,—with the petioles dilated and sheathing at base; the *flowers* arranged in umbels, or on numerous footstalks which arise from a common centre, like the rays of an umbrella. These umbels are either *simple*, or *compound*. In the *simple umbel*, each ray, or footstalk, supports and terminates in a single flower;—whereas, in the *compound umbel*, each primary ray sustains a small secondary umbel at its summit. The primary divisions of a compound umbel constitute what has been called the *universal umbel*, and the secondary divisions have been denominated the *partial umbels;* or they may be distinguished by the simple terms of *umbel*, and *umbellets*. At the base of each, is frequently a *verticil* of leaves, or *bracts*, called an *involucre;* formerly designated by the names of *universal* and *partial* involucres. For convenient distinction, the bracts at the base of the universal umbel are now simply termed *involucre;* and those at the base of the partial umbels, or umbellets, are called *involucels*. Each flower has the *calyx* superior (or rather the tube is adnate to the ovary), 5-toothed, or entire; *petals* 5, alternate with the teeth of the calyx, and inserted on the outside of a fleshy disk which crowns the ovary; *stamens* 5, alternate with the petals, and consequently opposite the teeth of the calyx; *styles* 2, distinct, simple, often persistent, and finally more or less diverging; *fruit* consisting of 2 single-seeded indehiscent *carpels* (*mericarpia*, *DC.*) eventually separating, each with its style, from a common *axis*, or slender bipartite central column (*carpophorum*, *DC.*), to which they adhere by their face, or *commissure*, near the apex, and are for a time suspended. Each carpel is marked longitudinally by *ribs*, or ridges; of which there are 5 more or less conspicuous, called *primary*,—and sometimes 4 others, alternating with them, which are called *secondary*. The ribs are separated by *channels*, or interstices, below which, within the coat of the carpels, are often linear receptacles of aromatic colored oily matter, called *vittæ*, or fillets. These *ribs* and *vittæ*, together with the form, or manner of *compression*, of the fruit, afford important aid in determining the generic character of the umbelliferous plants,—a point which is apt to be somewhat difficult in all highly natural groupes.

Root perennial, 3 to 6 inches long, and 1 third to 2 thirds of an inch in diameter, often forked downwards, whitish, transversely rugose. *Stem* 9 to 18 inches high, herbaceous, mostly angular and sulcate, smooth, pale green tinged with purplish brown, divided at summit into 3 (or rarely 4) spreading petioles, with an erect peduncle in the centre. *Common petioles* 3 to 4 inches long; *partial petioles* unequal, 1 fourth of an inch to an inch long. *Leaflets* mostly 5 (sometimes 6 or 7), unequal in size, glabrous, thin and membranous, with a few scattered subulate scarious bristles on the midrib and nerves; the three principal leaflets 3 to 5 inches long, and 2 to 3 inches wide, obovate, acuminate, unequally serrate, the lateral ones much smaller, oval, or often rather obliquely ovate. *Common peduncle* nearly as long as the common petioles, a little tumid at base. *Umbel* many-flowered; the central flowers often abortive; *pedicels* one third to half an inch long, with lance-linear acute denticulate involucre-like *bracts* at base. *Calyx* with 5 short broad-ovate acute teeth, often with a subulate bract at base. *Petals* yellowish green, ovate-oblong, rather obtuse. *Stamens* a little longer than the petals. *Styles* 2, shorter than the stamens, erect, at length diverging. *Ovary* compressed, cordate-ovate, or somewhat gibbous at base on each side. *Fruit* a succulent or fleshy kind of berry, somewhat compressed, broad-cordate and very obtuse, or rather reniform, crowned with the persistent calyx-teeth and styles, smooth, bright crimson when mature. [*Seeds* 2, semicircular. *Torr. Bigel.*]

Hab. Rich woodlands; Forks of Brandywine; G. Valley: rare. *Fl.* July. *Fr.* Sept.

Obs. The *root* of this plant is slightly stimulant, and not unpleasantly aromatic. Its celebrity, as an article of commerce with the Chinese, has been great; and its real value, as a medicament, has been extravagantly over-rated by the good people of the celestial empire.

2. P. TRIFOLIUM, *L.* Root globose; leaflets ternate, or quinate, lance-oblong, subsessile; peduncle of the umbel longer than the common petioles; flowers mostly dioicous; styles mostly 3; fruit subcoriaceous, 3-seeded. *Beck, Bot. p.* 152.

THREE-LEAVED PANAX. *Vulgò*—Dwarf Ginseng.

Root perennial, a globose tuber about half an inch in diameter, rather deep in the ground. *Stem* 4 to 6 or 8 inches high, slender, minutely grooved, or striate, smooth, mostly of a tawny purple color, divided at summit into 3 petioles half an inch to an inch long. *Leaflets* generally 3, but not unfrequently 5, unequal, half an inch to 2 inches long, and one fourth to 2 thirds of an inch wide, lance-oblong, rather acute, sharply serrate, somewhat cuneate at base, nearly sessile, glabrous, often with minute cartilaginous bristles on the midrib and nerves above. *Common peduncle* 1 to 2 inches long. *Staminate umbel* many-flowered, whitish; *pedicels* filiform, about one fourth of an inch long, with greenish white subulate *bracts* at base shorter than the pedicels. *Flowers* small. *Calyx* turbinate, truncate, obscurely dentate, white. *Petals* white, oblong-oval, obtuse. *Stamens* rather longer than the petals. *Style* 1. *Ovary* abortive. *Pistillate umbel* (sometimes *perfect*) fewer-flowered; *pedicels* shorter than in the staminate, with lance-linear involucrate *bracts* at base as long as the pedicels. *Calyx-teeth* minute. *Petals* 5 (none? *Torr.*), white, oblong-oval, obtuse, caducous in the *pistillate* flowers (sometimes wanting?) remaining longer on the *perfect* ones. *Stamens* when present longer than the petals. *Styles* 3, diverging, shorter than the petals. *Ovary* trigonous, somewhat urceolate, greenish. *Fruit* subcoriaceous, rugose, trigonous-ovoid, trisulcate and somewhat 3-lobed, pale greenish yellow when mature. *Seeds* 3, ovoid, acute at apex, slightly incurved, rugose-pitted, brownish yellow.

Hab. Moist shaded grounds; along rivulets: frequent. *Fl.* April. *Fr.* May.

Obs. This species is generally *dioicous*; but I have seen several specimens where the fertile flowers were *perfect*,—in which cases the petals were comparatively large, and the ovaries not quite so urceolate, as in the merely pistillate ones. These two are the only species hitherto known in the U. States. Prof. *Hooker* describes a *third*, (P. *horridum*—large, shrubby, and prickly,) which grows west of the Rocky Mountains; and may yet, perhaps, be found within the limits of the Union.

†† *Fruit dry*:—*twin carpels.* True Umbelliferæ.

Sub-Ord. 1. Seed *with the face flat, or plane.* Orthospermæ. *DC.*

1. Hydrocotyle Tribe. *Fruit* laterally compressed. *Carpels* convex or acute on the back. Hydrocotyleæ. *DC.*

136. HYDROCOTYLE. *L. Nutt. Gen.* 255.

[Gr. *Hydor*, water, & *Kotyle*, a cup; in allusion, perhaps, to the form of the leaves.]

Calyx with the limb obsolete. *Petals* ovate, acute, entire, with the apex straight. *Fruit* suborbicular, compressed at the sides. *Carpels* with 5 filiform *ribs*; the middle and lateral ribs often obsolete, the intermediate ones arched; without *vittæ*. *Involucre* minute, few-leaved.

1. H. americana, *L.* Glabrous; leaves reniform-orbicular, obscurely 7 or 9 lobed, doubly crenate, 9-nerved; umbels few-flowered, subsessile, opposite the petioles. *Beck, Bot. p.* 140.

American Hydrocotyle. *Vulgò*—American Marsh Pennywort.

Root perennial, tuberous, *Mx. Stem* 6 to 12 inches long, very slender, procumbent, angularly flexuose, or geniculate, compressed, nerved, with long filiform stolones, or runners, branching from the axils of the leaves. *Leaves* nearly orbicular, about an inch or an inch and a half in diameter, rather wider than long, pale green, thin and membranaceous, somewhat crenately lobed, divided to the petiole at base; *petioles* 1 to 2 inches long, compressed, nerved, resembling the stem, often with a few white scarious bristles near the leaf. *Umbels* or glomerules 2 or 3 to 6 flowered, nearly sessile, at the axils, or joints, but opposite the petioles, with a very minute few-leaved *involucre*. *Flowers* small. *Petals* greenish white. *Fruit* orbicular-ovate.

Hab. Swamps, and moist shaded places: frequent. *Fl.* July. *Fr.* Sept.

Obs. Four additional species (as the genus is now constituted by *De Candolle*) have been found in the U. States;—of which, probably, the H. *umbellata* may yet be found along the Schuylkill, in this County,—as I have seen it in abundance at the village of Manayunk.

b. *Umbels imperfectly compound.*

3.* Sanicula Tribe. *Fruit* ovoid-globose. Saniculeæ. *DC.*

137. SANICULA. *L. Nutt. Gen.* 258.

[Latin, *Sanare*, to heal; from its supposed virtue in healing wounds.]

Monoicously Polygamous: Staminate Fl. pedicellate. *Calyx* smooth, with 5 segments. Perfect Fl. sessile. *Calyx* echinate at

* I retain, for the sake of correspondence, the *numbers* of the Tribes, as arranged by Prof. *De Candolle*. We have no plants, here, belonging to his 2nd, 8th, 9th, 10th and 11th Tribes.

base; segments persistent. *Petals* with long acute points, inflexed so as to appear obcordate. *Fruit* subglobose. *Carpels* without *ribs*, [with many *vittæ*, *D C.*] densely clothed with hooked prickles. *Umbels* few-rayed, unequal. *Umbellets* capitate. *Involucre* few-leaved; leaves often divided. *Involucels* many-leaved, small.

1. S. MARILANDICA, *L.?* Leaves digitately dissected, the lower ones on long petioles; segments oblong-lanceolate, incised-serrate, mostly petiolate, the lateral ones deeply divided; staminate flowers on longish pedicels. *Beck, Bot. p.* 141.

Also? S. canadensis, *of Authors.*

MARYLAND SANICULA. *Vulgò*—Black Snake-root.

Root perennial. *Stem* about 2 feet high, branched above, grooved, smooth. *Leaves* 3-parted to the base, with the lateral segments deeply 2-parted; *segments* 2 or 3 to 5 inches long, and half an inch to 2 inches wide, varying from lanceolate to oblong, oblanceolate, and cuneate-obovate, sometimes lobed at apex, mostly acute, narrowed to a petiole at base, smooth, deeply incised-serrate, serratures cuspidate; *radical leaves* often large, with something of a pedate character, on petioles from 6 inches to a foot or more in length. *Umbels* with few unequal rays; sometimes only a solitary ray, or peduncle, 2 to 4 inches long. *Umbellets* capitate, one third to half an inch in diameter. *Staminate flowers* numerous, on pedicels about one fourth of an inch long. *Perfect flowers* few, sessile, in the centre of the umbellet. *Calyx-segments* lance-ovate,—sometimes narrow-lanceolate, longer, and pungently cuspidate. *Petals* white, (sometimes *yellow*!) acuminate, the apex closely inflexed, appearing emarginate, or obcordate. *Fruit* covered with hooked bristles, which are tumid or dilated at base.

Hab. Woodlands, and thickets: common. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. I have frequently met with specimens in our low grounds, agreeing very closely with this,—except that the petals are *yellow*, the calyx-segments rather shorter and less cuspidate, and the plant, generally, more of a yellowish green. If only a *variety*, it is a remarkable one; for flowers rarely vary between white and yellow. We have, also, what I believe to be the *var. canadensis, Torr.* which Prof. *Hooker* thinks is not entitled even to that distinction: But I find it so constantly distinct, that I cannot help considering it a well marked *variety*. It has much more the habit of S. *europæa*, than our common one. It seldom exceeds a foot in height; the radical leaves with a somewhat pentagonal outline, much smaller than the preceding, and on comparatively short petioles; the segments mostly obliquely ovate, sometimes cuneate at base, sessile, and generally glaucous. The umbellets are smaller than in the common variety; the sterile flowers are fewer and on shorter pedicels. Prof. *De Candolle* gives them, doubtingly, as distinct species,—though I think the characters are a little blended in his description; and it seems to me that the *names*, also, are *transposed*. With whom the mistake lies, I cannot say; but I am satisfied that what we here call S. *marilandica*, is the S. *canadensis, DC.* and *è contrà*. No other species are known in the U. States,—though Prof. *Hooker* enumerates three others in British America.

c. *Umbels perfectly compound.*

† *Fruit with primary ribs only.*

4. AMMI TRIBE. *Fruit* laterally compressed or didymous. AMMINEÆ. *DC.*

138. CICUTA. *L. Nutt. Gen.* 276.

[A Latin name for the *hollow stem*, or *internodes*, of plants; applied to this genus.]

Calyx with 5 acuminate segments. *Petals* roundish-obcordate, acuminate, with the point inflexed. *Fruit* roundish, compressed at the sides. *Carpels* with 5 flattish equal *ribs*, of which the lateral ones are marginal. *Channels* with single *vittæ*, which in the dry fruit fill them as high as the ribs. *Commissure* with 2 *vittæ*. *Involucre* 0, or few-leaved. *Involucels* many-leaved.

1. C. MACULATA, *L.* Stem spotted; lower leaves triternate and quinate; upper ones sub-biternate; leaflets lanceolate, acuminate, mucronately serrate; umbels terminal and axillary. *Beck, Bot. p.* 142.

SPOTTED CICUTA. *Vulgò*—Spotted Cowbane. Water Hemlock.

Root perennial, with thick oblong fleshy fibres. *Stem* 4 to 6 feet high, branching, nearly terete, smooth, striate with green and purple, or yellowish brown,—sometimes entirely purple—or, when growing in the shade, green. *Leaves* smooth; the lower ones on longish petioles, triternately dissected, with the terminal divisions mostly in fives; *segments*, or leaflets, 2 to 3 inches long, lanceolate, sometimes rather ovate-lanceolate, penninerved, the nerves running to the notches of the serratures instead of the points; *petioles* often with a membranaceous margin produced into 2 lobes at summit. *Umbels* spreading; rays slender. *Involucre* mostly 0, sometimes 1 or 2 linear leaves. *Involucels* of 5 or 6 small lance-linear denticulate leaves *Calyx-segments* rather conspicuous. *Petals* white. *Fruit* nearly round; sides compressed; *ribs* flat, or obtuse, yellowish brown; *interstices* reddish brown, or dark purple, filled with an aromatic oily matter. *Seed* ovoid, flatted and slightly keeled in front, greyish green.

Hab. Low swampy grounds; margins of rivulets: frequent. *Fl.* July. *Fr.* Sept.

Obs. The mature *fruit* of this is highly aromatic,—the odor something between that of anise-seed and the kernels of the black walnut. The *root* is an active poison; and numerous lives have been lost, for want of sufficient Botanical knowledge to distinguish the plant from the *Osmorhiza*, or Sweet Cicely. The *herb* is also destructive to Cattle, when eaten by them. There is one other species in the U. States.

139. ZIZIA. *Koch. DC. Prodr.* 4. *p.* 99.

[Greek, *Zizanion*, a troublesome weed. *ex Eat. sed qu?*]

Calyx with the limb 5-toothed, or obsolete. *Petals* elliptic, keeled, with a long tapering inflexed acumination. *Fruit* roundish, or oval, compressed at the sides. *Carpels* with 5 prominent nearly equal *ribs*, of which the lateral ones are marginal. *Channels* with single *vittæ*. *Commissure* with 2 *vittæ*. *Involucre* 0. *Involucels* few-leaved.

1. Z. AUREA? *Koch.* Leaves biternate; leaflets oblong-lanceolate, or ovate-lanceolate, acute, serrate, tapering at base; involucels unilateral, about 3-leaved. *Beck, Bot. p.* 143.

Smyrnium aureum. *Willd. Sp.* 1. *p.* 1468. *Mx. Am.* 1. *p.* 181. *Pers. Syn.* 1. *p.* 322. *Ait. Kew.* 2. *p.* 158. *Muhl. Catal. p.* 31. *Pursh, Am.* 1. *p.* 196. *Ell. Sk.* 1. *p.* 359. *Bigel. Bost. p.* 113. *Florul. Cestr. p.* 36. *Lindl. Ency. p.* 216.
Thaspium aureum. *Nutt. Gen.* 1. *p.* 196.
Sison aureus. *Torr. Fl.* 1. *p.* 305. *Ejusd. Comp. p.* 134.
Golden Zizia. *Vulgò*—Golden Alexanders.

Root perennial. *Stem* 18 inches to 2 feet high, somewhat branched above; angular, sulcate, smooth. *Leaves* biternate; the radical ones on petioles 6 to 9 inches long; *leaflets*, or segments, 1 to 2 inches long, and half an inch to an inch wide, nearly equally serrate, smooth, the lateral ones sessile, the terminal ones petiolate, the middle terminal one 3-parted. *Umbels* generally opposite the leaves; rays about an inch long. *Involucels* of 3 or 4 lance-linear leaves, somewhat united at base, about as long as the rays of the umbellets. *Calyx* minutely 5-toothed. *Petals* bright yellow. [*Fruit* elliptic. *Carpels* with 3 winged *ribs* on the back. *Torr.*]

Hab. Woodlands; Bath, near West Chester: not common. *Fl.* May—June. *Fr.*

Obs. I find, on closer investigation, that I have been in the habit of mistaking *Thaspium barbinode, Nutt.* for this plant: But I have a specimen *in flower*, from the above locality, which appears to agree pretty well with the descriptions of *Z. aurea*. The *fruit* I have not seen.

2. Z. cordata, *Koch.* Radical leaves simple, cordate, crenate-dentate, on long petioles; stem leaves ternate, subsessile, the leaflets ovate, serrate, petiolate; involucels small, of 1, 2 or 3 leaves. *Beck, Bot. p.* 143. Thapsia trifoliata? *Willd. Sp.* 1. *p.* 1465. *Pers. Syn.* 1. *p.* 322. *Ait. Kew.* 2. *p.* 156. Not of *Torr.*
Smyrnium cordatum. *Mx. Am.* 1. *p.* 170. *Pursh, Am.* 1. *p.* 196. *Ell. Sk.* 1. *p.* 359. *Torr. Fl.* 1. *p.* 307. *Ejusd. Comp. p.* 134. *Florul. Cestr. p.* 36. *Lindl. Ency. p.* 216. Also, *Pers. Syn.* 1. *p.* 322.
S. trifoliatum. *Muhl. Catal. p.* 31. *Nutt. Gen.* 1. *p.* 195. *Bart. Phil.* 1. *p.* 146.
Also (*fide DC. sed qu ?*), Sison trifoliatum. *Mx. Am.* 1. *p.* 168. *Muhl? Catal. p.* 31. *Pursh? Am.* 1. *p.* 194. *Ell? Sk.* 1. *p.* 356.
Cordate Zizia. *Vulgò*—Heart-leaved Alexanders.

Root perennial. *Stem* 1 to 2 feet high, somewhat branched above, striate, or slightly sulcate, smooth (sometimes pubescent). *Radical leaves* 1 or 2 to 4 inches long, and 1 to 3 inches wide, smooth, somewhat glaucous beneath; *petioles* 3 to 9 inches long, striate-grooved, smooth, or occasionally quite pubescent. *Stem leaves* ternate, or 3-parted; lower ones on short petioles, upper ones sessile. *Umbels* on peduncles 2 to 6 inches long, terminal and axillary; rays 7 to 10 or 11, unequal, half an inch to an inch and half long, sulcate. *Involucels* of 2 or 3 small lanceolate leaves. *Calyx* obsoletely 5-toothed. *Petals* always yellow (white, sometimes yellow, *Ell.*). *Fruit* roundish-ovate; sides compressed. *Carpels* with 3 conspicuous equal *ribs* on the back, the 2 marginal ones not so prominent; *interstices* convex greenish brown.

Hab. Woodlands; borders of thickets: common. *Fl.* May. *Fr.* July.

Obs. This plant is generally smooth, except sometimes a pubescent ring at the joints; but I have specimens in which the lower part of the stem, the petioles of the radical leaves, and the nerves on their upper surface, are densely covered with a short pubescence. I have never seen the *flowers white*; and think Mr. *Elliott* is probably mistaken in that particular. Red and blue flowers often vary into white; but *yellow* ones scarcely ever.

3. Z. INTEGERRIMA, *DC.* Leaves biternate, somewhat glaucous; leaflets oblong-ovate, very entire; umbel with slender elongated rays; involucels very minute, often 1-leaved. *Beck, Bot. p.* 143.
Smyrnium integerrimum. *Willd. Sp.* 1. *p.* 1468. *Mx. Am.* 1. *p.* 171. *Pers. Syn.* 1. *p.* 322. *Ait. Kew.* 2. *p.* 158. *Muhl. Catal. p.* 32. *Pursh, Am.* 1. *p.* 196. *Nutt. Gen.* 1. *p.* 195. *Bart. Phil.* 1. *p.* 146. *Ell. Sk.* 1. *p.* 360. *Lindl. Ency. p.* 216.
Sison integerrimus. *Torr. Fl.* 1. *p.* 305. *Ejusd. Comp. p.* 134.

VERY ENTIRE ZIZIA.

Whole plant glabrous. *Root* perennial. *Stem* 18 inches to 2 feet high, slightly branched above, (sometimes branching from the base), striate, purplish when young. *Radical leaves* often somewhat triternate, on longish petioles, which are dilated and purple at base; *stem leaves* biternate, petiolate; *common petioles* dilated, membranous, striate, or ribbed, purplish. *Leaflets*, or segments, an inch to an inch and a half long, and half an inch to 3 quarters wide, varying from oblong-ovate to oval and cuneate-obovate, mucronate, often oblique at base, ternate on a common petiole; the terminal segments mostly 3-parted, petiolate, the lateral ones sessile, or subsessile. *Umbels* mostly terminal, on peduncles 3 to 6 inches long; rays unequal, 1 to 3 inches long, slender, almost filiform, slightly angular, spreading; some of them often divaricate. *Involucels* minute, subulate, 1, 2 or 3 leaved (sometimes wanting?). *Calyx* minutely 5-toothed. *Petals* yellow. *Fruit* suborbicular, apex often oblique, sides compressed. *Carpels* striate, dark brown, with the *ribs* rather inconspicuous.

Hab. Mica-slate hills; Black Rock: not common. *Fl.* May. *Fr.* July.

Obs. First collected in this County, in 1828, by Mr. JOSHUA HOOPES. The foregoing are all the known species of the genus, as now established.

140. APIUM. *L. DC. Prodr.* 4. *p.* 100.

[Supposed, by *De Theis*, to be from the Celtic, *Apon*, water; its place of growth.]

Calyx with the limb obsolete. *Petals* roundish, entire, with a small inflexed apex. *Fruit* roundish, compressed at the sides. *Carpels* with 5 equal *ribs*, of which the lateral ones are marginal. *Channels* with single *vittæ*, the outer ones often with 2 or 3 *vittæ*. *Axis* undivided. *Involucre* 0. *Involucels* 0.

1. A. GRAVEOLENS, L. *var.* dulce, DC. *Lower leaves pinnately dissected, on very long petioles; upper ones 3-parted, with the segments cuneate, lobed and incised-dentate at apex.* DC. Prodr. 4. p. 101.

STRONG-SCENTED APIUM. Vulgò—*Celery.*

Gallicè—*Céléri.* Germanicè—*Der Celeri.* Hispanicè—*Apio hortense.*

Whole plant glabrous. Root *biennial, fusiform, thickish, fleshy.* Stem 2 *to* 3 *feet high, branching, sulcate.* Radical leaves *with broad cuneate incisely-lobed segments;* petioles *stout, succulent, channelled, 6 inches to a foot or more in length, and often purplish, unless artificially blanched by being covered.* Stem leaves *on short petioles;* segments *cuneate, more or less incised.* Umbels *terminal, and axillary, the axillary ones often subsessile;* rays *unequal, spreading. The umbels often appear to be* decompound *or* proliferous,—*some of the long rays bearing compound umbels.* Petals *greenish white.* Fruit *nearly orbicular;* styles *short, diverging, or recurved.*

Hab. Gardens: frequent. Fl. July. Fr. September.

Obs. *This is much cultivated for the sake of the succulent spicy petioles of the radical leaves, which are used as a salad: But in order to be rendered palatable they require to be blanched, or subjected to what is called* etiolation, *by the exclusion of light. The* var. rapaceum, *DC.* with a roundish root, *is sometimes cultivated. There are no native species in the U. States.*

141. PETROSELINUM. *Hoffm. DC. Prodr.* 4. *p.* 102.

[Greek, *Petra*, a stone, and *Selinum*; Stone Selinum: from its native habitat.]

Calyx with the limb obsolete. *Petals* roundish, incurved, scarcely emarginate, with a narrow inflexed apex. *Fruit* ovate, compressed at the sides. *Carpels* with 5 equal *ribs*, of which the lateral ones are marginal. *Channels* with single *vittæ*. *Commissure* with 2 *vittæ*. *Axis* bipartite. *Involucre* few-leaved. *Involucels* many-leaved.

1. P. SATIVUM, Hoffm. *Leaves decompound; segments of the lower ones cuneate-ovate, trifid, and incised-dentate, of the upper ones linear-lanceolate, nearly entire; involucels subulate.* DC. Prodr. 4. p. 102.

Apium Petroselinum. Willd. Sp. 1. p. 1475. Pers. Syn. 1. p. 324. Ait. Kew. 2. p. 161. Florul. Cestr. p. 119. Lindl. Ency. p. 216. Eat. Man. p. 22.

COMMON PETROSELINUM. Vulgò—*Parsley.*

Gallicè—*Persil.* Germanicè—*Die Petersilie.* Hispanicè—*Perexil.*

Root *biennial, fusiform, fleshy.* Stem 2 *to* 4 *feet high, somewhat angular, striate with green and yellowish stripes, branched, smooth.* Leaves *smooth, and shining green; lower ones much dissected, terminal segments* 3*-parted; upper ones mostly* 3*-parted, with narrow segments.* Umbels *terminal and axillary, peduncu-late.* Involucre *often of a single leaf, sometimes* 2 *or* 3, *linear or subulate.* Involucels *of* 5 *or* 6 *short subulate leaves.* Petals *greenish white.* Fruit *ovate*; styles *short, recurved.*

Hab. *Gardens: common.* Fl. *June.* Fr. *August.*

Obs. *The* leaves *are much used as a pot-herb, in soups, &c. The* root *is a popular diuretic. The* var. crispum, *or* curled Parsley, with the lower leaves broader, and curled on the margin, *is also frequent in gardens. There are no native species in the U. States.*

142. CARUM. *L. DC. Prodr.* 4. *p.* 114.

[Said to be derived from *Caria*; the native country of the plant.]

Calyx with the limb obsolete. *Petals* regular, obovate, emarginate, with an inflexed apex. *Fruit* oval, or ovate-oblong, compressed at the sides. *Carpels* with 5 equal *ribs*, of which the lateral ones are marginal. *Channels* with single *vittæ*. *Commissure* flat, with 2 *vittæ*. *Involucre* and *Involucels* various, sometimes 0.

1. C. CARUI, L. *Leaves multifid, somewhat bipinnatifid; segments linear; involucre* 1*-leaved, or* 0; *involucels* 0. DC. Prodr. 4. p. 115.

CARIAN CARUM. Vulgò—*Common Caraway.*

Gallicè—*Carvi.* Germanicè—*Gemeiner Kümmel.* Hisp.—*Alcaravéa.*

Root *biennial? (perennial, DC.), fusiform.* Stem *about 2 feet high, striate, smooth, branched.* Radical leaves *rather large, much dissected; segments narrow, acute*; petioles *4 to 8 inches long, dilated at base.* Stem leaves *multifid; segments filiform*; petioles *an inch to an inch and half long, dilated, nerved, scarious on the margin.* Umbels *terminal and axillary, on peduncles 2 to 5 inches long.* Involucre *of 1 leaf, filiform, or sometimes lanceolate, and membranaceous, often wanting.* Petals *white.* Fruit *oblong, or elliptic, often oblique at apex.* Styles *short, mostly reflexed.*

Hab. *Gardens: not common.* Fl. *June.* Fr. *August.*

Obs. *Sometimes cultivated for its highly aromatic fruit; which is used to give a flavor to cakes, and other articles, in domestic economy. There are no native species in the U. States.*

143. CRYPTOTÆNIA. *DC. Prodr.* 4. *p.* 118.

[Gr. *Kryptos*, hidden, and *Tainia*, a fillet; the *vittæ* being concealed in the carpels.]

Calyx with the limb obsolete. *Petals* obovate, slightly emarginate, with a narrow inflexed apex. *Fruit* linear-oblong, compressed at the sides; *styles* erect, enlarged at base. *Carpels* with 5 equal obtuse *ribs*, of which the lateral ones are a little distant from the margin. *Vittæ* several, visible only in a transverse section of the carpels. *Involucre* 0. *Involucels* few-leaved.

1. C. CANADENSIS, *DC.* Leaves ternate, petiolate, smooth; leaflets rhomboid-ovate, acute, doubly and acutely incised-serrate, subsessile; umbels terminal and axillary, irregular, somewhat in pairs; fruit beaked by the persistent styles. *Beck, Bot. p.* 144.

Sison canadense. *Willd. Sp.* 1 *p.* 1436. *Mx. Am.* 1. *p.* 168. *Ait. Kew.* 2. *p.* 145. *Muhl. Catal. p.* 31. *Bigel. Bost. p.* 114.

Chærophyllum canadense. *Pers. Syn.* 1. *p.* 320. *Pursh, Am.* 1. *p.* 195. *Ell. Sk.* 1. *p.* 358. *Lindl. Ency. p.* 210.

Myrrhis canadensis. *Nutt. Gen.* 1. *p.* 192. *Bart. Phil.* 1. *p.* 141. *Torr. Fl.* 1. *p.* 310. *Ejusd. Comp. p.* 136. *Florul. Cestr. p.* 35.

Uraspermum canadense. *Eat. Man. p.* 377.

CANADIAN CRYPTOTÆNIA. *Vulgò*—Hone-wort.

Root perennial, coarsely fibrous, *Stem* about 2 feet high, slightly grooved, or striate, smooth, branched above. *Leaves* ternate, sometimes quinate by 2 additional smaller leaflets; lower petioles long (6 or 8 inches); upper ones gradually shorter until nearly sessile at summit, dilated, scarious on the margin. *Leaflets* 2 to 4 inches long, and 1 to 2 and an half inches wide, varying from rhomboid-ovate to lanceolate, nearly sessile, acutely serrate to the very petiole; the lateral ones generally oblique at base, and often partially divided. *Umbels* terminal, and from the axils of the upper leaves; rays rather erect and very unequal, so as to appear somewhat paniculate. *Involucels* of 2 or 3 small subulate leaves. *Petals* white. *Fruit* about 1 fourth of an inch in length, oblong, sub-linear, a little inclined to elliptic, crowned with the subulate styles, not tapering at base. *Carpels* smooth, with 5 linear rather flattish *ribs*, of a pale yellowish green; *interstices* dark brown, striate.

Hab. Woodlands, and shaded places: frequent. *Fl.* June—Sept. *Fr.* Aug.—Oct.

Obs. The only species of the genus in the U. States.

144. SIUM. *L. Nutt. Gen.* 271.

[Supposed from the Celtic, *Siw*, water; its usual place of growth.]

Calyx with the limb obsolete, or 5-toothed. *Petals* obcordate, with an inflexed apex. *Fruit* suborbicular, compressed at the sides; *styles* diverging, minutely capitate at apex, crowning the fruit by their depressed disk-like base. *Carpels* with 5 equal prominent rather obtuse *ribs*, of which the lateral ones are marginal, or sometimes a little distant. *Channels* and *Commissure* with numerous *vittæ*. *Involucre* mostly many-leaved. *Involucels* many-leaved.

1. S. LATIFOLIUM, *L.* Stem sulcate-angled; leaves odd-pinnate; leaflets oblong-lanceolate, acuminate, smooth, equally serrate, sometimes pinnatifid, unequal at base, sessile, the terminal one petiolate; involucre many-leaved. *Beck, Bot. p.* 144.

Broad-leaved Sium. *Vulgò*—Water-Parsnep.

Root perennial, creeping. *Stem* 2 to 4 or 5 feet high, stout (half an inch to three quarters in diameter), angular, with broad channels, striate, smooth, yellowish green, much branched. *Leaves* pseudo-pinnate, the early or lower ones sometimes laciniate, or multifid, especially when submersed. *Leaflets* in 3 to 6 pairs, with a terminal odd one, 2 to 4 inches long, and one fourth of an inch to an inch wide, varying from linear-lanceolate to ovate-lanceolate, tapering to an acute point, acutely serrate, the terminal one sometimes partially 3 lobed at apex, and on a petiole about half an inch long. *Umbels* spreading; rays numerous, unequal, half an inch to an inch or inch and a half long, sulcate-angled. *Involucre* of 6 or 8 leaves, one fourth to half an inch long, lanceolate, entire, or often laciniate-toothed near the apex. *Involucels* of 5 to 8 or 10 short lanceolate leaves. *Calyx-teeth* obsolete (elongated, *DC. Hook.*). *Petals* white. *Fruit* roundish oval, conspicuously crowned, whilst young, with the broad thick yellowish base of the styles (*stylopodium*, *DC.*). *Carpels* inclining to separate in the middle; *ribs* 5, prominent, the lateral ones marginal; *interstices* dark brown, striate-grooved.

Hab. Swamps; margins of streams; Brandywine: frequent. *Fl.* July. *Fr.* Sept.

Obs. The S. *lineare*, *Mx. Nutt.* and *Torr.* (which according to *Nuttall*, is also the S. *tenuifolium*, *Muhl.*—and the S. *longifolium*, *Pursh*, *sed qu?*—not of *Florul. Cestr.*) has been found along the Girard Canal, on the North-Eastern side of the County; but is quite rare. Its long narrow lance-linear leaflets, which are sometimes almost filiform, and the serratures rather remote, give it a strikingly different appearance from the preceding. But those features are variable; and upon the best examination I could make, I came to the conclusion, with Professors *Torrey* and *Hooker*, that it is only a *variety* of S. *latifolium*. It is doubtful whether any other species, as the genus is now constituted, occurs in the U. States.

145. BUPLEURUM. *Tournef. DC. Prodr.* 4. *p.* 127.

[Greek, *Bous*, an Ox, and *Pleuron*, a rib; but the application is obscure.]

Calyx with the limb obsolete. *Petals* roundish, entire, involute, with a short broadish retuse apex. *Fruit* ovate-oblong, compressed at the sides, crowned with the broad depressed base of the styles. *Carpels* with 5 equal *ribs*, which are either winged, filiform and acute, or obsolete; the lateral ribs marginal. *Channels* with or without *vittæ*. *Involucre* various, sometimes 0. *Involucels* various.

1. B. ROTUNDIFOLIUM, *L.* Leaves roundish-ovate, entire, perfoliate; involucre none; involucels of 5 ovate mucronate leaflets; fruit with very slender ribs; channels smooth, mostly without vittæ. *Beck, Bot. p.* 145.

ROUND-LEAVED BUPLEURUM. *Vulgò*—Modesty. Thorough-wax. *Gallicè*—Percefeuille. *Germanicè*—Das Hasenörlein. *Hisp.* Buplero.

Root annual. *Stem* 1 to 2 feet high, terete, striate-grooved, smooth, branching. *Leaves* 1 to 3 inches long, and 3 fourths of an inch to 2 inches wide, mostly ovate, rather acute, mucronate, rounded at base, very entire, smooth, glaucous beneath, the nerves radiating from the stem, which perforates the leaves at about one fourth their length from the base. *Umbels* terminal, spreading, 5 to 9-rayed; rays unequal, one fourth to half an inch long. *Involucels* 5-leaved, or rather deeply 5-parted; segments ovate, mucronate, or with a short acumination, 5-nerved, longer than the involucels. *Petals* greenish yellow. *Fruit* ovate-oblong, crowned with the broad disk-like base of the styles (*stylopodium, DC.*) which has a shining waxy appearance. *Carpels* with 5 minute filiform *ribs; interstices* greenish brown, striate-grooved.

Hab. Gardens, and waste grounds: not common. *Fl.* June-Aug. *Fr.* Aug.-Oct.

Obs. This foreigner is not very common; but is becoming naturalized about gardens, in several neighborhoods. There are no native species, and this is the only one which has appeared in the U. States.

5. SESELI TRIBE. *Fruit* roundish on a transverse section. SESELINEÆ. *DC.*

146. FŒNICULUM. *Adans. DC. Prodr.* 4. *p.* 142.
[Latin; diminutive of *Fœnum*, Hay; from a supposed resemblance in its odor.]

Calyx with the limb obsolete, a little tumid. *Petals* oval, entire, involute, with a broadish retuse apex. *Fruit* elliptic-oblong, somewhat compressed at the sides, subterete on a transverse section, crowned with the conic base of the styles. *Carpels* with 5 obtuse keeled *ribs*, of which the lateral ones are marginal, and often a little broader. *Channels* with single *vittæ*. *Commissure* with 2 *vittæ*. *Involucre* 0. *Involucels* 0.

1. F. VULGARE, Gærtn. *Stem terete at base; leaves biternately dissected; segments linear-subulate, elongated.* DC. l. c. *Anethum Fœniculum.* Willd. Sp. 1. p. 1469. Pers. Syn. 1. p. 323. Ait. Kew. 2. p. 159. Florul. Cestr. p. 119. Lindl. Ency. p. 218. Eat. Man. *p.* 21.

COMMON FŒNICULUM. Vulgò—*Fennel. Garden Fennel.* Gallicè—*Fenouil.* Germanicè—*Der Fenchel.* Hispanicè—*Hinójo.*

Root *perennial?* (*biennial, DC.*). Stem 4 *to* 5 *feet high, branching, terete, striate-grooved, smooth, purplish green, somewhat glaucous.* Leaves *large, finely and somewhat biternately dissected, smooth;* segments *an inch to an inch and half long, subulate-linear, almost filiform, subdivisions often dichotomous;* common petiole *much dilated, sheathing, produced into two marginal lobes at summit.* Umbels *many-rayed* (15 *to* 25 *or* 30), *spreading*; rays *unequal,* 1 *to* 3 *or* 4 *inches long, grooved.* Petals *yellow.* Fruit *elliptic, or ovate-oblong*; styles *short, reflexed, somewhat capitate at apex, the base enlarged, conical, crowning the fruit.* Carpels *semi-terete, striately ribbed and grooved.*

Hab. Gardens: frequent. Fl. *July.* Fr. *September.*

Obs. *The whole plant is highly aromatic. It is chiefly cultivated for its fruit, which is often used in domestic economy; and sometimes smoked, like tobacco, as a remedy for cholic. The* F. dulce, *or* Sweet Fennel, *is also sometimes, though rarely, to be met with in the gardens. There are no native species in the U. States.*

147. THASPIUM. *Nutt. Gen.* 282.

[So named, "from the isle of *Thaspia*" (*Thapsos*?). *Nuttall.*]

Calyx with the limb 5-toothed. *Petals* elliptic, with a long tapering inflexed acumination. *Fruit* subelliptic, not compressed at the sides. *Carpels* with 5 unequal *ribs*, of which 3 or 4 are winged; the lateral ones winged and marginal. *Channels* striate, with single *vittæ*. *Commissure* with 2 *vittæ*. *Involucre* mostly 0. *Involucels* unilateral, about 3-leaved.

1. T. Barbinode, *Nutt.* Stem sulcate-angled, smooth, pubescent at the nodes; lower leaves somewhat triternate; upper ones biternate, and ternate; leaflets cuneate-ovate, acute, unequally incised-serrate, entire at base. *Beck, Bot. p.* 146.

Ligusticum Barbinode. *Mx. Am.* 1. *p.* 167. *Pers. Syn.* 1. *p.* 315. *Pursh, Am.* 1. *p.* 193. *Ell. Sk.* 1. *p.* 352.

Smyrnium Barbinode. *Muhl. Catal. p.* 32.

Thapsia trifoliata. *Torr. Fl.* 1. *p.* 317. *Ejusd. Comp. p.* 138. Not? of *Willd.*

Node-bearded Thaspium. *Vulgò*—Meadow Parsnep.

Plant yellowish green. *Root* perennial. *Stem* about 2 feet high, somewhat branched, angular, sulcate, striate, smooth, with a short rather coarse and dense pubescence at the joints, and base of the petioles. *Leaves* mostly biternate, smooth: the uppermost ones opposite, and often ternate, the lower or radical ones sometimes triternate; segments or leaflets 1 to 2 and a half inches long, and half an inch to an inch and half wide, deeply incised-serrate, a little scabrous on the margin, and nerves above, the lateral ones sometimes 2-parted, frequently obtuse and unequal at base, the middle or terminal one often 3-parted, cuneate at base. *Umbels* terminal and dichotomal; rays unequal, half an inch to an inch long, sulcate-angled, pubescent at the base, or common centre. *Involucre* mostly 0, sometimes 1 or 2 lance-linear leaves. *Involucels* of 3 or 4 subulate-linear leaves a little longer than the rays of the umbellets. *Calyx* distinctly 5-toothed. *Petals* deep yellow. *Styles* filiform, erect, twice as long as the petals. *Fruit* elliptical, one fourth of an inch long; *ribs* unequal; the *outer carpel* with 4 winged ribs, the dorsal or central one not winged; the *inner carpel* with 3 winged ribs (*viz.* the dorsal and 2 marginal ones), the intermediate ones not winged; *interstices* dark brown. *Seed* linear-elliptic, plano-convex, somewhat ribbed.

Hab. Borders of woodlands; meadows, &c. frequent. *Fl.* June. *Fr.* August.

Obs. The oily matter, in the *vittæ* of the fruit, has a strongly camphorated aromatic odor, as remarked by Mr. *Nuttall*. This plant, through inadvertence, has heretofore generally passed for *Zizia aurea*, (*Smyrnium aureum, L.*) with our Chester County Botanists; but its characters are detailed by Mr. *Nuttall* with his usual accuracy and fidelity,—and cannot be mistaken, on a careful examination. Two other species, as the genus is now constituted, occur in the U. States,—of which, probably, T. *atropurpureum* may yet be found along the Schuylkill, within the limits of this County.

Angelica Tribe. *Fruit* dorsally compressed, with a double wing on each side. Angelicæ. *DC.*

148. ANGELICA. *L. Nutt. Gen.* 270.

[Latin; "ab *angelicâ* virtute;" from its supposed extraordinary virtues.]

Calyx with the limb 5-toothed, or obsolete. *Petals* oval, or elliptic-lanceolate, with an incurved, or straight acumination. *Fruit* elliptic, compressed on the back, 2-winged on the margin. *Carpels* with 3 elevated approximate dorsal *ribs*, and 2 lateral ones dilated into the marginal wings. *Channels* with single *vittæ*. *Commissure* with 2 to 4 *vittæ*, and a central longitudinal groove. *Involucre* 0, or few-leaved. *Involucels* many-leaved.

1. A. triquinata, *Mx.* Stem striate, hoary-pubescent at summit; leaves pseudo-bipinnate, the divisions often quinate; leaflets ovate-oblong, equally serrate; umbels spreading, and, with the peduncles, tomentose-pubescent. *Beck, Bot. p.* 147. Not of *Bigel.*
A. hirsuta triquinata. *Muhl. Catal. p.* 31.
Also, Ferula villosa. *Pursh, Am.* 1. *p.* 192. *excluding the synonym.*
Triquinate Angelica.

Root perennial. *Stem* 2 to 4 or 5 feet high, and 1 fourth to half an inch in diameter, simple, erect, terete, striate, smoothish and purple below, pubescent or whitish-villose at summit. *Lower leaves* somewhat triternately compounded, on naked *petioles* 4 to 10 or 12 inches long, with an inch or two of the base dilated and embracing the stem. *Upper*, or *stem leaves*, mostly bipinnately dissected, with the divisions in threes, fives, or sevens; the *petioles* 1 to 2 or 3 inches long, and about half an inch wide,—dilated nearly in their whole length. *Leaflets*, or segments, 1 to 2 and a half inches long, and half an inch to an inch wide, mostly ovate-oblong, rather acute, a little oblique at base, sessile, or on short petioles, smooth and somewhat coriaceous; the terminal one oval, lance-ovate, or subrhomboid, generally cuneate at base, sessile, or often tapering to a petiole. *Umbels* 3 or 4, terminal and subterminal, on somewhat corymbose, sulcate, pubescent peduncles; the lateral peduncles with a sublanceolate *bract*, or rather the membranous petiole of an abortive leaf, at base; rays spreading, unequal, 1 to 2 inches long, sulcate, densely clothed with a white tomentose pubescence. *Involucre* 0. *Involucels* of 6 to 10 unequal subulate-linear and often unilateral leaves, finally rather shorter than the rays of the umbellets. *Calyx* distinctly 5-toothed. *Petals* white, roundish ovate, with a long subulate inflexed acumination. *Fruit* elliptic-oblong, pubescent, crowned with the thick subconic base of the diverging or reflexed *styles*. *Carpels* with 3 approximated prominent almost winged dorsal *ribs*, the two lateral ones dilated into a broad margin. *Commissure* with 3 longitudinal grooves, in the mature fruit, and 4? *vittæ* (2, *DC.*).

Hab. Borders of woodlands, and thickets: frequent. *Fl.* July-Aug. *Fr.* Sept.-Oct.

Obs. This is unquestionably, I think, the A. *triquinata* of all the American Botanists, except Dr. *Bigelow*,—who considers the following species to be *Michaux's* plant: But it seems to me, that the observation of *Michaux*,—"pedunculo pedicellisque minutissima pube subcandicantibus,"—applies better to this species, than to the following.

2. A. atropurpurea, *L.* Stem sulcate-striate, smooth dark purple; leaves pseudo-bipinnate, the divisions ternate and quinate; leaflets lance-ovate, acute, unequally incised-serrate, sub-lobed, the outermost

pair confluent at base, the terminal one sessile, or subpetiolate; umbels globose, and, with the peduncles, smoothish. *Beck, Bot. p.* 147. *A. triquinata. Bigel. Bost. p.* 110.

DARK PURPLE ANGELICA.

Root perennial. *Stem* 4 to 6 feet high, and 1 to 2, sometimes nearly 3, inches in diameter at base, somewhat branching above, terete, striately grooved, smooth throughout and dark purple, with something of a glaucous mealiness. *Lower leaves* large, and somewhat triternately compounded. *Upper*, or *stem leaves*, mostly biternate, on very broad inflated peticles (1 to 2 inches wide). *Leaflets* 2 to 6 inches long, and 1 to 2 and a half inches wide, lance-ovate, or oblong-ovate, acute, often somewhat acuminate, unequal at base smooth, thin and rather membranaceous, paler or slightly glaucous beneath, generally sessile, the lateral ones often with a large lobe; the outermost pair completely united at base and decurrent on the common petiole; the terminal odd one broad-ovate, acute, often somewhat 3-lobed, abruptly narrowed at base, sessile, or often tapering to a short petiole,—sometimes the 3 terminal leaflets are completely confluent at base. *Umbels* large, at length globose, 6 to 10 or 12 inches in diameter,—or the rays 3 to 5 or 6 inches long,—sometimes a large central ray over-topping the others; rays striate-sulcate, with acute ridges, which are minutely scabrous on the edges. *Involucre* 0. *Umbellets* globose, 1 to 2 inches in diameter; rays minutely scabrous. *Involucels* subulate-filiform, much shorter than the rays of the umbellets,—the leaves often near the middle of the rays, instead of at the base. *Calyx* obsoletely 5-toothed. *Petals* greenish white, oval, with a subulate acumination which is inflexed, or sometimes only incurved. *Fruit* broad-elliptic, smooth, crowned with the depressed dilated base of the erect or diverging *styles*. *Carpels* with 3 prominent approximated dorsal *ribs*, the 2 lateral ones dilated into a thickish margin. *Commissure* with a central longitudinal groove, and 2 *vittæ*.

Hab. Moist low grounds; Brandywine: frequent. *Fl.* May. *Fr.* July.

Obs. The very respectable Author of the *Florula Bostoniensis* (Dr. BIGELOW,) contends that this is *not* the *A. atropurpurea*, of *Linnæus*. It would ill become *me* to undertake to decide the question; but, as the American Botanists generally, have united in so considering it,—and Professors *De Candolle* and *Hooker* having concurred with them,—I have not hesitated in adhering to the name. This is one of the largest of our *umbelliferæ*. The whole plant has a heavy disagreeable odor, when bruised. The *root* is said to be poisonous. One other species, of somewhat doubtful character, has been enumerated in the U. States.

7. PEUCEDANUM TRIBE. *Fruit* dorsally compressed, dilated at the margin into an apparently single even wing (though formed of 2 margins), not thickened at the edge. PEUCEDANEÆ. *DC.*

149. ARCHEMORA. *DC. Prodr.* 4. *p.* 188.

[Nomen fantasticum ex *Archemoro*, qui juxta mythologiam Apio ingesto obiit. *DC.*]

Calyx with the limb 5-toothed. *Petals* orbicular-ovate, with a tapering inflexed acumination. *Fruit* subelliptic, compressed on the back, flattish, or lenticular, with a prominent and apparently entire or simple margin. *Carpels* with 5 equidistant obtuse *ribs*, the 2 lateral ones dilated into a winged margin. *Channels* filled with single *vittæ*. *Commissure* with 2 *vittæ*. *Involucre* 0, or few-leaved. *Involucels* many-leaved.

1. A. RIGIDA, *D C.* Stem rigid, striate; leaves pseudo-pinnate, smooth; leaflets 3 to 5 pairs with a terminal odd one, oblong-lanceolate, very entire, or remotely and sparingly incised-dentate near the apex, sessile; umbels spreading, terminal and subterminal, smooth, on long pedunculs. *Beck, Bot. p.* 148.
Also ? A. tricuspidata. *D C. Prodr.* 4. *p.* 188.
Sium rigidius. *Willd. Sp.* 1. *p.* 1433. *Pers. Syn.* 1. *p.* 316. *Ait. Kew.* 2. *p.* 145. *Muhl. Catal. p.* 31. *Pursh, Am.* 1. *p.* 194. *Ell. Sk.* 1. *p.* 353.
S. rigidum. *Lindl. Ency. p.* 216.
S. longifolium. *Florul. Cestr. p.* 34. not of *Pursh.*
Also ? S. tricuspidatum. *Ell. Sk.* 1. *p.* 354.
Sison marginatum. *Mx. Am.* 1. *p.* 168. Also, *Pers. Syn.* 1. *p.* 317. *Muhl. Catal. p.* 34. *Pursh, Am.* 1. *p.* 191.
Œnanthe rigida. *Nutt. Gen.* 1. *p.* 189. *Bart. Phil.* 1. *p.* 142. *Eat. Man. p.* 237.
Pastinaca rigida. *Torr. Fl.* 1. *p.* 314. *Ejusd. Comp. p.* 137.

RIGID, OR STIFF ARCHEMORA. *Vulgò*—Cow-bane.

Root perennial. *Stem* 2 to 4 or 5 feet high, slender, erect, rigid, terete, striate, smooth, slightly branched at summit. *Leaves* all simply pseudo-pinnate; *petioles* 1 to 5 or 6 inches long, channelled and somewhat margined. *Leaflets* usually in 3 or 4 pairs, with a terminal odd one, 2 to 3 or 4 inches long, and one fourth to half an inch, and sometimes 3 quarters, in width, varying from linear-lanceolate to lance-oblong, and cuneate-oblanceolate, often a little falcate, acute, sessile, somewhat rigid, circumscribed by a narrow whitish slightly scabrous margin, sometimes very entire, often with 1 to 3 or 4 longish acute incised teeth on each side near the apex (frequently more teeth on one side than on the other),—and occasionally the leaflets are so deeply incised as to appear laciniate. *Umbels* about 3, on rather long sulcate-striate peduncles; rays slender, 1 to 2 inches long. *Involucre* mostly 0, sometimes of 2 or 3 lance-linear leaves. *Involucels* of 6 or 8 linear-subulate leaves, shorter than the rays of the umbellets. *Calyx* with 5 acute teeth, or sometimes obsolete? *Petals* white, apparently emarginate, or obcordate, by the inflexion of the apex. *Fruit* elliptic-ovate, with convex acute and apparently simple margins, moderately compressed and convex on the back (flat, *Nutt.* much compressed, *Torr.*), crowned with the dilated subconic base of the short diverging *styles*. *Carpels* with 5 nearly equal flattish equidistant greenish *ribs*, the lateral ones dilated into a suberose marginal wing with a thin edge; *interstices* convex, dark purple. *Commissure*, or face, a little concave, lined with a whitish suberose coat. *Seed* elliptic, acute at each end, plano-convex, ribbed on the back.

Hab. Low, swampy grounds: frequent. *Fl.* Aug. *Fr.* Sept.—Octo.

Obs. This plant is believed to be an active poison,—particularly to horned cattle, when eaten by them; and therefore ought to be eradicated from all pastures. Two or three additional species are enumerated in the U. States.

150. PASTINACA. *L. Nutt. Gen.* 267.

[Latin, *Pastus*, a repast, or nourishment; from the use made of the root.]

Calyx with the limb obsolete, or minutely denticulate. *Petals* roundish-ovate, involute, with a broadish retuse incurved apex. *Fruit* oval, flatly compressed on the back, with a dilated flat margin. *Carpels* with 5 very slender *ribs*; 3 of them dorsal, and equidistant; the 2

lateral ones remote, contiguous to the dilated margin. *Channels* with single, conspicuous *vittæ*. *Commissure* with 2 or more *vittæ*. *Vittæ* mostly linear. *Seed* flat. *Involucre* mostly 0. *Involucels* 0, or few-leaved.

1. P. SATIVA, L. *Stem sulcate, smooth; leaves pseudo-pinnate, minutely pubescent; leaflets ovate-oblong, rather obtuse, incised-dentate, sub-lobed, sessile, the terminal one 3-lobed, and petiolate; umbels large, spreading; fruit oval, emarginate, often somewhat obcordate.* Beck, Bot. p. 148.

COMMON PASTINACA. Vulgò—*Parsnep.* *Garden Parsnep.* Gall.—*Panais potager.* Germ.—*Die Pastinake.* Hisp.—*Chirivia.*

Plant yellowish green. Root *biennial, fusiform, fleshy, large (often 2 to 3 inches in diameter, and more than a foot long).* Stem *3 to 5 feet high, and half an inch to an inch in diameter, somewhat branching above.* Leaves *somewhat shining, but minutely pubescent on the nerves, and under surface.* Leaflets *in 3 or 4 sessile pairs, 2 to 4 inches long, and 1 to 2 inches wide, the terminal one 2 to 3 inches in length, and as wide as long, on a petiole 1 to 2 inches long.* Umbels *nearly level on the top; rays numerous, 2 to 4 inches long.* Involucre 0, *or very small.* Involucels 0, *or frequently a few subulate leaves.* Calyx-teeth *obsolete.* Petals *deep yellow.* Fruit *very flatly compressed on the back, crowned with the depressed peltate base of the short diverging* styles. Carpels *with filiform* ribs; interstices *greenish yellow, mostly with single dark purple* vittæ *in the centre.* Commissure *mostly with* 2 vittæ, *often with 1 or 2 additional imperfect ones.* Vittæ *generally linear, sometimes a little clavate.*

Hab. *Gardens, and cultivated lots: common.* Fl. *June—Aug.* Fr. *Aug.—Octo.*

Obs. *Generally cultivated for its fine esculent* root; *of which there is a superior* variety, *called* Guernsey Parsnep. *This plant has strayed from the gardens, and become partially naturalized in many places,—making rather a troublesome weed. There are no native species, as the genus is at present established, in the U. States.*

151. HERACLEUM. *L. Nutt. Gen.* 264.

[Dedicated to *Hercules;* who, it is pretended, had some knowledge of Botany.]

Calyx with the limb obsolete, or 5-toothed. *Petals* obcordate, with an inflexed acumination; the outer ones often radiate, large, and bifid. *Fruit* elliptic, or obovate, much compressed on the back, with a dilated flat margin. *Carpels* with 5 slender *ribs;* 3 of them dorsal, and equidistant; the 2 lateral ones remote, contiguous to the dilated margin. *Channels* with single *vittæ*. *Commissure* with 2 *vittæ*. *Vittæ* mostly clavate. *Seed* flat. *Involucre* mostly few-leaved, caducous. *Involucels* many-leaved.

1. H. LANATUM, *Mx.* Stem sulcate and striate, pubescent; leaves ternate, petiolate, villose-pubescent beneath; leaflets broad, somewhat palmate-lobed, subcordate at base, on villose petioles; fruit oval, or obovate. *Beck, Bot. p.* 149.

WOOLLY HERACLEUM. *Vulgò*—Cow Parsnep.

Root perennial. *Stem* 4 to 6 or 8 feet high, and 3 fourths of an inch to near 2 inches in diameter at base, branched above, sulcate, with the ridges and furrows striate, pubescent. *Leaves* very large, trifoliate; the *common petiole* dilated into a

broad sheathing nerved greenish-white membrane, 2 to 3 inches wide, densely villose on the margin. *Leaflets* 4 to 10 or 12 inches in length, and as wide as long, more or less cordate and sometimes unequal at base, palmately expanding towards the apex into unequal lobes, the middle one often 3-lobed; lobes acuminate, unequally sub-lobed, and somewhat crenate-serrate, the upper surface sprinkled with short hairs, the under side tomentose-pubescent, and villose along the nerves; *petioles* 1 to 4 inches long. *Umbels* spreading, very large (sometimes a foot or more in breadth); rays numerous, 2 to 6 inches long, sulcate-striate, tomentose on one side. *Involucre* of 2 or 3 lance-oblong membranous villose leaves, which mostly soon fall off. *Involucels* of 6 or 8 leaves, which are lanceolate, with a long slender acumination, sometimes longer, but generally shorter, than the rays of the umbellets. *Calyx-teeth* often obsolete, sometimes (especially in rayed flowers) conspicuous, ovate and acuminate. *Petals* white, obcordate, or oval and emarginate, with a tapering inflexed acumination (sometimes the acumination is not inflexed): the *exterior flowers* are generally *radiate* by the enlargement of the outer petals,—the lobes each side of the inflexed point being monstrously produced, giving the petals the appearance of being deeply bifid; these lobes are 1 sixth to 1 third of an inch in length, oblong, obtuse, mostly unequal, and striately veined. *Fruit* oval and often emarginate, or obcordate-oval, much compressed on the back, crowned with the dilated conical base of the diverging *styles*. *Carpels* with filiform *ribs; interstices* greenish, with single purple *vittæ* in the centre. *Commissure* with 2 *vittæ*. *Vittæ* all shorter than the fruit, inversely clavate. *Seed* a little convex externally, flat and keeled on the inner face, ovate, mucronate, pendulous by a short filament at the apex.

Hab. Low grounds; along Brandywine: frequent. *Fl.* May—June. *Fr.* July—Aug.

Obs. This is the tallest of our umbelliferous plants; although the stem is not quite so stout as that of *Angelica atropurpurea*. It is said the young stems of the *Heracleum* are used as a potherb, by some of the Aborigines. It is the only ascertained species of the genus, in the U. States.

† † *Fruit with primary and secondary ribs.*

12. Daucus Tribe. *Fruit* somewhat dorsally compressed, or subterete on a transverse section; the 5 *primary ribs* filiform, bristly, the 2 lateral ones on the *commissure*, or inner face of the carpels; the 4 *secondary ribs* more prominent, dilated into *prickles*, which are distinct, or united into a wing at base. Daucineæ. *DC.*

152. DAUCUS. *L. Nutt. Gen.* 259.

[*Daukos*, the ancient Greek name of the Carrot.]

Calyx with the limb 5-toothed. *Petals* obovate, emarginate, with an inflexed acumination; the outer ones often radiate, obcordate, or bifid. *Fruit* ovoid-oblong, somewhat compressed on the back. *Carpels* with the 5 *primary ribs* filiform and minutely bristly; the 3 intermediate ones dorsal, the 2 lateral ones on the *commissure*; the 4 *secondary ribs* equal, prominently winged, each pectinately divided into a single row of prickles. *Channels* with single *vittæ*, under the *secondary ribs*. *Involucre* many-leaved; leaves pinnatifid. *Involucels* many-leaved; leaves entire, or trifid.

1. D. carota, *L.* Stem hispid; leaves bi- or tripinnate; leaflets pinnatifid, segments lanceolate, cuspidate; umbel finally concave; prickles equal to the diameter of the oblong-oval fruit. *Beck, Bot. p.* 149. *Vulgò*—Carrot. Wild Carrot.

Gallicè—Carotte. *Germanicè*—Die Moehre. *Hisp.*—Zanahória.

Root biennial, fusiform, yellowish. *Stem* 2 to 4 feet high, terete, striate-sulcate, hispid, branching. *Leaves* twice or thrice pinnate, hispidly pilose; leaflets half an inch to an inch long, much incised, or pinnatifid, the segments cuspidate, and bristly-ciliate. *Umbels* on long peduncles, or naked branches, at first nearly flat, or a little convex, concave when in fruit. *Involucre* many-leaved; leaves deeply pinnatifid, nearly as long as the umbel; segments linear-subulate, scabrous-ciliate. *Involucels* many-leaved; leaves linear-subulate, often trifid, scarious and ciliate on the margin, about as long as the rays of the umbellets. *Petals* white, or often ochroleucous, occasionally with tinges of purple, the outer ones larger. *Ovary* hirsute. *Fruit* oblong-oval, crowned with the thickish depressed base of the diverging *styles*. *Carpels* with the *primary ribs* very slender, ciliate with minute bristles, 2 of them on the *commissure;* the *secondary ribs* winged, cleft into prickles, which are somewhat barbed.

Hab. Pastures, road-sides, and gardens: frequent. *Fl.* July-Sept. *Fr.* Sept.-Octo.

Obs. The *var. sativa, DC.* or *hortensis, Lindl.* (common Garden Carrot) with a *large, fleshy, yellow, or reddish orange-colored root*, is often cultivated in gardens, as a culinary vegetable, for soups, &c. In Europe it is much esteemed as a food for milch cows, and other stock; but in this country the *root culture*, for such objects, is not much attended to. The *wild variety* is extensively naturalized amongst us; and is becoming quite a nuisance on our farms, where the proprietors are careless and slovenly. The *root* and *seeds* are said to be actively diuretic, and are quite popular as a remedy for calculous complaints. One other species is enumerated in the U. States.

SUB-ORD. II. Secd *inflexed at the margin, or with a longitudinal groove on the face.* CAMPYLOSPERMÆ. *DC.*

Fruit with primary ribs only.

15. SCANDIX TRIBE. *Fruit* laterally compressed or contracted, elongated, generally beaked. SCANDICINEÆ. *DC.*

153. CHÆROPHYLLUM. *L. Nutt. Gen.* 279.

[Gr. *Chairo*, to rejoice, and *Phyllon*, a leaf; the leaves having an agreeable odor.]

Calyx with the limb obsolete. *Petals* ovate, or obovate, entire, or emarginate, mucronate, or with a small inflexed acumination. *Fruit* linear-oblong, scarcely beaked, contracted at the sides. *Carpels* with 5 obtuse equal smooth ribs, of which the latcral ones are marginal; the *commissure* with a deep longitudinal groove. *Channels* with single *vittæ*. *Seed* terete-convex, sulcate on the face. *Involucre* 0, or few-leaved. *Involucels* many-leaved.

1. C. PROCUMBENS, *Lam.* Stem somewhat procumbent, more or less pilose; leaves bipinnate; leaflets pinnatifid, segments lance-oblong, rather obtuse; umbels opposite the leaves, 2 to 3-rayed; involucre 0; umbellets 3 to 5-rayed; involucels of 4 or 5 ovate-oblong ciliate leaves; fruit prismatic, smooth. *Beck. Bot. p.* 149.

Scandix procumbens. *Willd. Sp.* 1. *p.* 1452. *Ait. Kew.* 2. *p.* 152. *Muhl. Catal. p.* 31.

Myrrhis procumbens. *Torr. Fl.* 1. *p.* 309. *Ejusd. Comp. p.* 135. *Florul. Cestr. p.* 139.

Uraspermum procumbens. *Eat. Man. p.* 377.

PROCUMBENT CHÆROPHYLLUM. *Vulgò*—Wild Chervil.

Root annual. *Stem* 6 to 15 inches long, slender, oblique or procumbent, often nearly erect, branching, sulcate and striate, mostly pilose, especially when young, sometimes nearly smooth. *Leaves* bipinnately decompound; *petioles* pilose, the dilated base densely fringed with long white hairs. *Leaflets* pinnatifid; segments mostly obtuse, obscurely mucronate, more or less bristly-ciliate. *Umbels* terminal, or lateral and opposite the leaves, on peduncles 1 to 3 inches long; rays generally 3 (sometimes 2, and even 1). *Involucre* 0. *Involucels* shorter than the rays of the umbellets. *Petals* white, oval, or ovate, mucronate, incurved, or often straight. *Fruit* dark brown, 1 fourth to 1 third of an inch long, nearly linear, slightly beaked, or crowned with the conic base of the *styles*. *Carpels* with 5 flattish or obtuse *ribs*; *interstices* convex, reddish brown. *Commissure* incurved, or furrowed by a deep grove (with 2 *vittæ* within the marginal ribs?).

Hab. Moist shaded grounds; Brandywine: not common. *Fl.* April-May. *Fr.* June.

Obs. This plant is by no means common; but I have observed it in abundance about the east end of Wistar's bridge, on the bank of the Brandywine. I have received specimens from Prof. SHORT, of Kentucky, with the fruit ovate-oblong, and not at all beaked,—which I suppose to be the *var. Boscii*, of *De Candolle*. No other species, as the genus is now constituted, is known in the U. States.

154. OSMORHIZA. *Raf. DC. Prodr.* 4. *p.* 232.

[Greek, *Osme*, or *Osmos*, odor, and *Rhiza*, root; from its sweet or fragrant root.]

Calyx with the limb obsolete. *Petals* obovate, somewhat emarginate, with a very slender inflexed acumination. *Fruit* linear-oblanceolate, angular, elongated, attenuated at base, contracted at the sides. *Carpels* with 5 rather acute subsuleate bristly *ribs*, of which the lateral ones are marginal; the *commissure* with a deep groove. *Channels* flat, without *vittæ*. *Seed* much shorter than the pericarpial tube of the calyx, terete, with the margin involute. *Involucre* 2 to 4-leaved. *Involucels* about 5-leaved.

1. O. LONGISTYLIS, *DC.* Stem mostly dark purple, hoary-pubescent; leaves biternate, somewhat hairy; leaflets incised-serrate; styles elongated, subulate-filiform, erect, or finally somewhat diverging; fruit clavate. *Beck, Bot. p.* 150. Icon, *Hook. Am.* 1. *tab.* 96.
Scandix dulcis. *Muhl. Catal. p.* 31.
Chærophyllum Claytoni. *Pursh? Am.* 1. *p.* 195. Not? of *Pers. Ell.* nor *Lindl.*
Uraspermum Claytoni. *Nutt. Gen.* 1. *p.* 193. *Bart. Phil.* 1. *p.* 144. *Bigel. Bost. p.* 112. *Florul. Cestr. p.* 36. *Eat. Man. p.* 377.
Myrrhis longistylis. *Torr. Fl.* 1. *p.* 310. *Ejusd. Comp. p.* 135.

LONG-STYLED OSMORHIZA. *Vulgò*—Sweet Cicely.

Root perennial, fusiform, or branching, subcarnose, with a sweet anisate flavor. *Stem* 2 to 3 feet high, solid with pith, branching, somewhat ribbed, or striate, dark purple, thickly clothed with canescent and slightly curled hairs (rarely smooth), the branches often smoothish; stem sometimes branching from the root; *radical leaves* 1 or 2, on pubescent purple *common petioles* 9 to 12 inches in length. *Leaves* mostly biternate; *petioles* subtomentose-pubescent, especially at the base and subdivisions; *leaflets* oblong-ovate, acute, incised-serrate, spriukled with hairs above, shining beneath, yet hairy on the midrib, nerves, and margin. *Umbels* mostly in pairs, or terminating the forked extremities of the stem and branches, sometimes axillary, on peduncles 2 or 3 to 6 inches long; *rays* 3 to 5 (usually 4), 1 to 3 inches

long, with one or two short abortive ones, spreading, often nearly divaricate when in fruit. *Involucre* of 1 or 2 to 4 small lanceolate deciduous leaves. *Umbellets* of 2 to 5 or 6 spreading rays *Involucels* mostly of 5 lance-oblong acuminate ciliate persistent and finally reflexed leaves. *Petals* white, obovate, emarginate, or often apparently a little bifid, with a very acute slender inflexed point. *Fruit* dark green or blackish, about half an inch long, clavate, or oblanceolate, often curved, crowned by the conic base of the *styles*, and tapering at base to a bristly *cauda*, or stipe, about two thirds as long as the fruit. *Styles* about equal in length to the young ovary, or to the longest diameter of the mature fruit. *Carpels* with the *ribs* slightly sulcate, armed with acute appressed bristles; *interstices* flat, shining, punctate under a lens.

Hab. Rich, moist, rocky woodlands: frequent. *Fl.* May. *Fr.* Aug.

Obs. Remarkable for the pleasant flavor of the *root*,—which resembles that of Aniseed, or Sweet Fennel.

2. O. BREVISTYLIS, *DC.* Stem pale green, smoothish below; leaves biternate, hairy; leaflets pinnatifidly incised; styles short, conical, approximate; fruit subclavate. *Beck, Bot. p.* 150. Icon, *Hook. Am.* 1. *tab.* 97.

Myrrhis Claytoni. *Mx? Am.* 1. *p.* 170. *Torr. Fl.* 1. *p.* 309. *Ejusd. Comp. p.* 135.

Chærophyllum Claytoni? *Pers. Syn.* 1. *p.* 320. *Ell. Sk.* 1. *p.* 358. *Lindl. Ency. p.* 210. Not? of *Pursh.*

Uraspermum hirsutum. *Bigel. Bost. p.* 112. *Eat. Man. p.* 377.

SHORT-STYLED OSMORHIZA.

Root perennial, branching,—of a sweetish, mawkish taste,—and not the pleasant anisate flavor of the preceding. It more resembles that of *Aralia nudicaulis*, as Dr. *Bigelow* remarks. *Stem* about 2 feet high, mostly fistular, branching, striate, pale green, smooth below, pilose above, especially at the base of the branches, and the margins of the sheathing petioles; stem often branching from the root; *radical leaves* 1 or 2, on smooth green *common petioles* 9 to 12 inches in length. *Leaves* biternately decompound; *petioles* and *leaflets* pilose with longer and straighter hairs than in the preceding species; the leaflets generally larger (smaller, *Hook.*), more membranaceous, and more deeply incised, often pinnatifid. *Umbels* nearly as in the preceding,—but the *rays* rather longer, and the *involucels* not quite so large. *Petals* white. *Fruit* somewhat clavate, or nearly lance-oblong, crowned with the conical base of the very short parallel conic styles, and attenuated below to a slender stipe, or *cauda*, which is clothed with appressed bristles.

Hab. Rich, moist, low grounds; Cheyney Jefferis' old dam: rare. *Fl.* May. *Fr.* Aug.

Obs. This certainly has a strong general resemblance to the foregoing,—but is by no means so common, in this vicinity;—nor have they yet been found growing in company. It was first observed, here, in 18[illegible], by [illegible]. CHEYNEY HANNUM. The distinctive characters of the two species are obvious enough, when the attention is directed to them (which appears first to have been done by Dr. *Paine*, of Geneva, N. Y.); but they are so blended, in the *descriptions* of Authors, that it is not easy to disentangle them, and settle the synonyms. With the aid of my friend Mr. JOSHUA HOOPES, who collected several fine specimens of each, I have endeavored to give the distinguishing characteristics, as they appear in the Chester County plants The difference in the taste of the *roo* is quite striking; and my observations agree better with Dr. *Bigelow's*, than with those of Dr. *Torrey*. No other species are known, in the U. States.

16. Smyrnium Tribe. *Fruit* turgid, laterally contracted. Smyrneæ. *DC.*

155. CONIUM. *L. Nutt. Gen.* 261.

[An ancient name, of rather obscure Etymology. *See Rees' Cyclopæd.*]

Calyx with the limb obsolete. *Petals* obcordate, with a short inflexed acumination. *Fruit* ovate, compressed at the sides. *Carpels* with 5 prominent equal *ribs*, undulate-crenulate when immature, the lateral ones marginal. *Channels* striate, without *vittæ*. *Seed* with a deep narrow groove on the face. *Involucre* few-leaved. *Involucels* dimidiate, or unilateral, about 3-leaved.

1. C. maculatum, *L.* Stem glabrous, spotted; leaves pseudo-tripinnate; leaflets lanceolate, pinnatifid, with acute and often incised segments; leaves of the involucels lanceolate, shorter than the umbellets. *Beck, Bot. p.* 150.

Spotted Conium. *Vulgò*—Common Hemlock.

Gallicè–Ciguë ordinaire. *Germanicè*–Der Schierling. *Hisp.*–Ceguda.

Root biennial, fusiform, often forked downwards, whitish and fleshy. *Stem* 2 to 4 feet (in some rich spots more than 8 feet) high, branched, fistular, terete, somewhat sulcate, striate with green and yellow, often spotted with dark purple. *Leaves* tripinnately decompound; *common petioles* dilated, nerved, with scarious margins; *leaflets* incised-pinnatifid, smooth. *Umbels* many-rayed, spreading. *Involucre* 2 to 5 leaved, mostly reflexed; leaves lanceolate, often with a long acumination. *Umbellets* of numerous spreading rays. *Involucels* halved, or unilateral, of 3 or 4 linear-lanceolate acuminate leaves. *Petals* white. *Fruit* ovate, somewhat gibbous, compressed at the sides, crowned with the dilated base of the diverging *styles*. *Carpels* with the *ribs* wavy, especially while young; the *faces* inclining to separate between the apex and base, when mature: *interstices* flattish, striate, roughish, brown.

Hab. Rich grounds; among rubbish: not common. *Fl.* June—July. *Fr.* Sept.

Obs. This foreigner is naturalized in some localities; but is not common. It is somewhat plentiful about G. Matlack's (late Hayman's), on the Philadelphia road. The plant, when bruised, has a heavy disagreeable odor. It is a powerful narcotic; and the *extract* was formerly celebrated as a remedy for scrophulous diseases. The green herb is sometimes employed, in popular practice, in the form of cataplasm, for painful ill-conditioned ulcers. The *root* is said not to be poisonous. No other species is known in the U. States.

Sub-Ord. III. Seed *with the base and apex of the face curved inward.* Cœlospermæ. *DC.*

17. Coriandrum Tribe. *Fruit* globose; the *primary* and *secondary ribs* wingless, and often scarcely distinct. Coriandreæ. *DC.*

156. CORIANDRUM. *L. DC. Prodr.* 4. *p.* 250.

[Greek, *Koris*, a bug; the bruised leaves having the odor of a bed-bug.]

Calyx 5-toothed; teeth conspicuous, acute, unequal, persistent. *Petals* obcordate, with an inflexed acumination; the outer ones radiate, bifid. *Fruit* globose. *Carpels* cohering, scarcely separating, each with 5 undulate depressed *primary ribs*, of which the lateral ones are placed in front of an accessory margin; the 4 *secondary ribs* more prominent,

keeled. *Channels* without *vittæ*. *Commissure* with 2 *vittæ*. *Seed* concave on the face, covered with a loose membrane. *Involucre* 1-leaved, or 0. *Involucels* dimidiate, or unilateral, about 3-leaved.

1. C. SATIVUM, L. *Leaves pseudo-bipinnate; segments of the lower ones broad-cuneate, incised-dentate, of the upper ones narrow, and linear; carpels hemispherical.* DC. l. c.

COMMON CORIANDRUM. Vulgò—*Coriander.*

Gallicè—*Coriandre.* Germanicè—*Der Koriander.* Hispanicè—*Cilántro.*

Root *annual.* Stem 1 *to 2 feet high, rather slender, striate, smooth a little branched at summit.* Leaves *smooth; segments of the* lower ones *broad, with a rounded outline at apex, sub-lobed and incised toothed, cuneate at base;* upper ones *much dissected, with the segments linear.* Umbels *spreading, 3 to 5-rayed.* Involucre *of 1 subulate leaf, sometimes* 0. Umbellets *of numerous short unequal rays, several of them abortive.* Involucels *of about 3 unilateral subulate leaves, as long as the rays of the umbellets.* Calyx *with 5 acute teeth, 2 or 3 of them larger.* Petals *white, with a tinge of purple; the outer ones enlarged, bifid, or 2-lobed.* Fruit *roundish-ovoid, mutronate by the conical base of the* styles. Carpels *very concave on the face, cohering by their margins, so as to form, apparently, a simple globose fruit.* Commissure *with 2 linear-lanceolate* vittæ *in a loose membrane on the face of the seed.*

Hab. *Gardens: frequent.* Fl. *June—July.* Fr. *August—September.*

Obs. *This is occasionally cultivated for its aromatic* fruit,—*which is often used by the pastry Cook, and the Confectioner,—and also to impart a flavor to tinctures, &c. It is the only ascertained species of the genus.*

[Polygonum erectum. P. virginianum, and P. amphibium. *Octandria Trigynia.*]

Order 3. Trigynia.

a. *Ovary inferior: Corolla monopetalous.*

157. VIBURNUM. *L. Nutt. Gen.* 290.

[A name borrowed from the Latin Classics; Etymology obscure.]

Calyx with the limb small, 5-toothed, persistent. *Corolla* rotate, subcampanulate, or tubular; limb 5-lobed. *Stamens* equal, longer than the corolla. *Stigmas* mostly sessile. *Berry* (or rather *Drupe*) oval, or subglobose, by abortion 1-seeded, crowned by the teeth of the calyx. *Seed* compressed.

Shrubs: branches mostly opposite; leaves simple, opposite, petiolate; flowers cymose, terminal. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

1. V. PRUNIFOLIUM, *L.* Leaves roundish-oval, ovate, or obovate, obtuse, or sometimes rather acute, serrulate; petioles margined, even; cymes sessile. *Beck, Bot. p.* 156.

PLUM-LEAVED VIBURNUM. *Vulgò*—Black Haw. Sloe.

Stem 8 to 12 or 15 feet high much branched, with numerous lateral spurs, or abortive branches; young branches virgate, glabrous, fuscous. *Leaves* 1 to 2 inches long, and nearly as wide as long, more or less orbicular, varying from ovate to oval and obovate, obtuse, or with a very short abrupt point, finely serrate, smooth; *petioles* one third to half an inch long, with a narrow even margin. *Cymes* sessile, termi-

nating the short lateral branches, spreading, about 3 inches broad, mostly with 4 principal divisions; pedicels and flowers with minute *bracts* at base. *Calyx-teeth* obtuse. *Corolla* white; lobes spreading, ovate-oblong, obtuse. *Stamens* longer than the corolla; *filaments* subulate; *anthers* roundish, didymous, yellow. *Stigmas* sessile. *Drupe* oblong-oval, compressed, about half an inch long, and one third of an inch wide, bluish black when mature; *nut* oval, much compressed, with a thin shell. *Seed* scabrous-punctate.

Hab. Fence-rows, and thickets: frequent. *Fl.* May. *Fr* October.

Obs. The *fruit*, when mature, is sweetish and esculent.

2. V. LENTAGO, *L.* Leaves lance-oval, or ovate, conspicuously acuminate, acutely dentate-serrate, serratures subuncinate; petioles with undulate margins; cymes terminal, sessile. *Beck, Bot. p.* 156.

Stem 15 to 20 feet high, branched. *Leaves* 2 to 4 inches long, and 1 to 2 and a half inches wide, mostly lance-ovate, sometimes broad-ovate, always with a conspicuous acumination, slightly decurrent on the petiole, smooth, subcoriaceous, the serratures generally somewhat uncinate; *petioles* half an inch to an inch long, mostly with an undulate margin, and more dilated at base. *Cymes* sessile, somewhat corymbose, 2 to 3 inches broad, looser or more straggling than the preceding. *Corolla* white. *Drupe* oval, or obovoid-oblong, somewhat compressed, half an inch to 3 quarters in length, and one third to half an inch wide, bluish black when mature; *nut* broad-oval, much compressed. *Seed* brownish, scabrous-punctate, or rather covered with small honeycomb-like cells.

Hab. Chester Creek; Wynn's meadows: not common. *Fl.* May. *Fr.* Oct.

Obs. This is generally a larger shrub than the preceding; and although somewhat resembling it, is readily distinguished by its leaves. *Muhlenberg* calls it *Pear-leaved* Virburnum; and in fact, when first observed, here, it was supposed to be the V *pyrifolium*. It was detected on Chester Creek, in 1832, by D. TOWNSEND, Esq. and has also been found near Downingtown, by Mr. JOSHUA HOOPES; but it is rare in this part of the County. It is quite abundant at Wynn's meadows, near the source of the Brandywine. The *fruit* of this is also sweet and esculent, after the action of frost.

3. V. NUDUM, *L.* Leaves oblong-oval, or lance-oblong, acute or subacuminate, with the margin somewhat revolute and nearly entire, ferruginous-punctate beneath; cymes terminal, on naked peduncles. *Beck, Bot. p.* 156.

NAKED VIBURNUM.

Stem 4 to 6 or 8 feet high, slender, branched. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 inches wide, varying from lance-oblong to oval and obovate, slightly acuminate, tapering at base, subcoriaceous, entire, or obsoletely repand-toothed, with the margin slightly revolute, smoothish above, with ferruginous nerves and dots beneath; *petioles* about half an inch long, and, with the *peduncles*, covered with a ferruginous scaly pubescence. *Cymes* on naked terminal peduncles 1 to 2 inches long. *Flowers* somewhat crowded. *Corolla* white. *Drupe* ovoid, acute at apex, one third of an inch long, and one fourth of an inch in diameter, deep blue when mature, punctate with whitish scaly dots.

Hab. North Valley Hill, near Gunkle's Mill: not common. *Fl.* May, June. *Fr.* Sept.

Obs. Collected by D. TOWNSEND, Esq. in 1830.

4. V. DENTATUM, *L.* Leaves orbicular-ovate, coarsely serrate-dentate; nerves prominent beneath, with pubescent tufts in the axils; cymes

terminal, pedunculate ; fruit subglobose. *Beck, Bot. p.* 156.
V. dentatum, *var.* glabellum. *Mx. Am.* 1. *p.* 179. *var.* lucidum. *Ait. Kew.* 2. *p.* 167.

Dentate Viburnum. *Vulgò*—Arrow-wood.

Stem 8 to 10 or 12 feet high, branched, the young branches slender, straight, and angular. *Leaves* 2 to 3 inches long, and generally as wide as long, roundish-ovate, rather acute, often a little cordate at base, sometimes rather lance-ovate and acuminate, smoothish (or often sprinkled with hairs) and shining green above, paler beneath, with the nerves prominent, branching towards the margin of the leaf, slightly hispid, with tufts of pubescence in the axils, at the midrib ; *petioles* about 3 fourths of an inch long, and, with the *peduncles*, tomentose-pubescent with branching or fasciculate hairs. *Cymes* subumbellate, 2 to 4 inches broad, principal divisions 5 to 7 ; *common peduncle* about 2 inches long. *Bracts* lance-oblong, ciliate, caducous. *Calyx-teeth* colored, rather acute. *Corolla* white. *Drupe* subglobose, mucronate, scarcely one fourth of an inch in diameter, dark blue, or bluish black, when mature. *Seed* dark purple, roughish-tuberculate, convex and obtusely ridged on one side, with a deep groove on the other, dividing it into 2 lobes,—sometimes with *two grooves*, and a central ridge.

Hab. Low grounds ; along rivulets : frequent. *Fl.* June. *Fr.* September.

Obs. The young straight branches, according to *Marshall*, were formerly much used by the Aborigines, for making their arrows.

5. V. acerifolium, *L.* Leaves subcordate, 3-lobed, unequally and somewhat angularly dentate-serrate, softly pubescent beneath ; petioles without glands, hairy, with filiform-subulate pilose stipules at base ; cymes subumbellate ; flowers not radiate ; fruit oval, compressed. *Beck, Bot. p.* 156.

Maple-leaved Viburnum. *Vulgò*—Arrow-wood.

Stem 2 or 3 to 5 feet high, slender, somewhat branched. *Leaves* 3 to 5 inches in length, and nearly as wide as long, subcordate at base, 3-lobed at apex, lobes acuminate, the lateral ones shorter, diverging ; *petioles* nearly an inch long, pilose, with 2 filiform stipules at base. *Cymes* 2 to 3 inches broad ; principal divisions 7 or 8 ; *common peduncles* about 2 inches long, terminating the stem and branches. *Flowers* all equal, or not *radiate*. *Calyx-teeth* colored. *Corolla* white, often tinged with red. *Drupe* broad-oval, compressed, mucronate, one fourth to one third of an inch in length, and nearly as wide as long, black, or purplish black, when mature. *Seed* reddish brown, compressed, somewhat margined, with 2 obtuse ridges on one face, and 2 corresponding broad grooves on the other.

Hab. Woodlands : very common. *Fl.* May—June. *Fr.* September.

Obs. This species, as well as the preceding, is known by the common name of Arrow-wood. The slender stems, when the pith is removed, afford good *fuse-sticks*, for blasting rocks ; and are often used for that purpose. Ten additional species are enumerated in the United States.

158. SAMBUCUS. *L.* *Nutt. Gen.* 291.

[Gr. *Sambuke*, a musical instrument ; supposed to have been made of this shrub.]

Calyx with the limb small, mostly 5-cleft. *Corolla* subrotate, 5-lobed ; lobes obtuse. *Stamens* equal, shorter than the corolla. *Stigmas* sessile. *Berry* subglobose, scarcely crowned, pulpy, 1-celled, 3 to 5-seeded.

Shrubby, or *subherbaceous:* leaves opposite, odd-pinnate, or pseudo-pinnate; leaflets serrate, or laciniate, stipular, or glandular, at base; flowers cymose, or thyrsoid, terminal. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ.

1. S. CANADENSIS, *L.* Stem suffruticose; leaves odd-pinnate; leaflets oblong-oval, acuminate, serrate; cymes spreading, 5-parted. *Beck, Bot. p.* 155. Not of *Marshall.*

S. NIGRA. *Marsh. Arbust. p.* 141. Not of *Linn.*

CANADIAN SAMBUCUS. *Vulgò*—Elder-bush. Common Elder.

Root perennial. *Stem* 5 to 8 or 10 feet high, at length shrubby, filled with a large pith, branching; branches swelled at the joints, the young ones virgate. *Leaves* pinnate; *leaflets* usually in 3 pairs with a terminal odd one, 2 to 4 inches long, and 1 to 2 inches wide, the terminal one often obovate, all acuminate, and sharply serrate, on short petioles, sprinkled with hairs above, paler and somewhat pubescent beneath, the nerves pilose on both sides; *stipules* often wanting. *Cymes* spreading, 5 to 8 inches broad, terminating the young branches, on peduncles 4 to 6 inches long. *Calyx-segments* sometimes 6 or 7, lance-oblong, rather acute, colored. *Corolla* white, sometimes 6 or 7-cleft; lobes ovate, spreading, or revolute. *Stamens* sometimes 6 or 7, rather shorter than the corolla. *Berries* numerous, small, juicy, dark purple, or nearly black, when mature.

Hab. Fence-rows, and thickets: common. *Fl.* June. *Fr.* August.

Obs. This is rather a troublesome plant, on our farms,—the long roots being very tenacious of life, and inclined to spread extensively along fence-rows, and hedges. The inner bark is a popular ingredient in making ointments, for sores; and an infusion of the bruised leaves is often used, by gardeners, to expel insects from young vines. The ripe *berries*, according to Mr. *Cozzens*, afford a delicate re-agent, or chemical test, for detecting acids and alkalies. *See Annals of N. Y. Lyceum, Vol.* 1. *p.* 44. There is one other species in the U. States (S. *pubens, Mx.*) which I have seen about *Mauch Chunk*, on the mountains,—with the flowers in thyrsoid panicles,—and bearing scarlet berries, which are mature at the time this species is in flower.

Ovary superior: Corolla pentapetalous.

159. RHUS. *L. Nutt. Gen.* 292.

[Greek, *Rhoos*,—or Celtic, *Rhudd*,—red; from the color of the fruit.]

DIOICOUSLY POLYGAMOUS: *Calyx* small, 5-parted, persistent. *Petals* 5, lance-ovate, spreading. STERILE FL. *Stamens* 5, mostly shorter than the petals. *Stigmas* mostly 3, obtuse, subsessile. *Ovary* abortive. FERTILE FL. *Stamens* 5, or often 0 *?* *Stigmas* mostly 3, sessile, or subsessile. *Drupe* small, subglobose, nearly dry; *nut* bony.

Shrubs: sometimes very lactescent; leaves alternate, odd-pinnate, or ternate; flowers in racemose or thyrsoid panicles. *Nat. Ord.* 113. *Lindl.* ANACARDIACEÆ.

† *Leaves odd-pinnate.* * *Branches villose.*

1. R. TYPHINA, *L.* Young branches and petioles densely villose; leaflets in many pairs, lance-oblong acuminate, acutely serrate, somewhat pilose beneath; panicles dense, terminal. *Beck, Bot. p.* 76.

TYPHA-LIKE RHUS. *Vulgò*—Staghorn Sumach.

Lactescent. *Stem* 10 to 15 or 20 feet high, and sometimes 4 to 6 inches in diameter, branched above; branches thick, densely clothed, when young, with a soft velvet-like pubescence. *Leaves* pinnate; *leaflets* in 8 to 12 or 15 pairs with a terminal odd one, 2 to 4 inches long and half an inch to an inch wide, regularly and acutely serrate, all except the terminal one sessile and obtuse at base, green and smooth above, glaucous and pubescent beneath, the midrib pilose on both sides;

common petiole 1 to 2 feet long, very villose. *Flowers* yellowish green, in thyrsoid panicles terminating the young branches, dioicous by abortion. *Sterile flowers* in larger and rather open panicles. *Ovary* abortive. *Fertile flowers* in smaller dense thyrsoid panicles. *Stamens* 0? *Ovary* densely clothed with a long greyish tomentose pubescence, which on the *fruit* becomes a bright purple; *peduncles* densely villose.

Hab. Bank of the Schuylkill; Black Rock: not common. *Fl.* June. *Fr.* Sept.-Oct.

Obs. This species was observed in Willistown, by Mr. JOSHUA HOOPES; but it is very rare, except along the Schuylkill. It often attains a much larger size than any of our other species; and the fine purple clusters of fruit render the *fertile* plant quite an ornamental shrub.

* * *Branches smooth.*

2. R. GLABRA, *L.* Young branches and petioles glabrous; leaflets in many pairs, lance-oblong, acuminate, serrate, smooth on both sides; panicles dense, terminal. *Beck, Bot. p.* 75.

GLABROUS RHUS. *Vulgò*—Common Sumach. Smooth Sumach.

Very lactescent. *Stem* 3 to 8 or 10 feet high, irregularly branching; young branches stout and thick, with a large pith, somewhat angular and very smooth. *Leaves* pinnate; *leaflets* in 10 to 12 or 15 pairs with a terminal odd one, 2 to 3 or 4 inches long, and half an inch to an inch wide, glabrous, green above, glaucous beneath, irregularly and sometimes obsoletely serrate, all rather obtuse at base, and all sessile except the terminal one,—which is also often sessile, with a smaller leaflet at its base; *common petiole* 9 to 18 inches long, glabrous, often dark purple. *Flowers* yellowish green, in thyrsoid panicles terminating the young branches, dioicous by abortion. *Sterile flowers* in larger and rather open panicles, or compound thyrsoid racemes. *Calyx-segments* lanceolate, acute. *Stigmas* clavate, subsessile. *Ovary* abortive, in a fleshy peltate crenate-dentate disk, in the bottom of the calyx. *Fertile flowers* in smaller and more dense panicles. *Stamens* 0. *Stigmas* subsessile. *Ovary* clothed with a short greyish silky villus, which on the *fruit* becomes a bright purple, and, under a lens, is translucent, or chrystalline in appearance,—containing a sprightly acid; *peduncles* pubescent.

Hab. Sterile old fields; fence-rows, & thickets: common. *Fl.* June. *Fr.* Sept. Oct.

Obs. This shrub is apt to be abundant in neglected old fields,—and its prevalence, in arable lands, is strong evidence of a poor thriftless farmer. The *branches* and *leaves* are used in tanning morocco leather. The *acid*, in the chrystalline pubescence of the *fruit*, is pronounced by Mr. *Cozzens* (*See Ann. N. Y. Lyceum, Vol.* 1. *p.* 42-3,) to be the malic,—which, he says, may be obtained pure, with very little trouble, and used for some of the purposes of the citric acid.

3. R. COPALLINA, *L.* Young branches and petioles downy-pubescent; leaflets in 4 to 6 or 7 pairs, oblong or oval-lanceolate, mostly entire, pilose beneath; common petiole winged; panicles dense, terminal. *Beck, Bot. p.* 75.

COPAL RHUS. *Vulgò*—Mountain Sumach.

Stem 3 to 6 or 8 feet high, branching; young branches rather slender, terete, puberulent, somewhat verrucose. *Leaves* pinnate; *leaflets* in 3 to 7 pairs (mostly 4 or 5 pairs) with a terminal odd one, 1 to 3 inches long, and half an inch to an inch or inch and a quarter wide, subcoriaceous, varying from lance-ovate to oval and oblong-lanceolate, acute or somewhat acuminate, sometimes obtuse and emargi-

nate, obscurely and sparingly crenate-serrate, often very entire, smooth and shining above, pilose beneath, the midrib pubescent on both sides, all sessile except the terminal one; *common petiole* 3 to 6 or 8 inches long, downy-pubescent, with a *winged margin* which is contracted at the base of the leaflets, giving the petiole the appearance of being articulated, not winged below the lowest pair of leaflets. *Flowers* yellowish green, in thyrsoid panicles, smaller than in the preceding species, terminating the young branches, dioicous by abortion. *Sterile flowers* in rather spreading or open panicles. *Calyx-segments* ovate. *Style* short; *stigma* often simple; *ovary* abortive, in a small peltate disk. *Fertile flowers* mostly *perfect*? *Stamens* short. *Stigmas* subsessile, clavate. *Ovary* clothed with a grey pubescence which, on the *fruit*, becomes dark purple, and strongly acid; *peduncles* hirsute.

Hab. Dry sterile hills; Mica-slate range: frequent. *Fl.* July. *Fr.* October.

Obs. This species is quite abundant on the Mica-slate hills; but it seems to be pretty much confined to that description of soil. There is a *variety*, on the mountains, with coarsely dentate leaves; and even here, in some instances, the leaves have a few coarse serratures.

4. R. VENENATA, *DC.* Young branches and petioles smooth; leaflets in 4 to 6 pairs, oblong-oval, or lance-obovate, abruptly acuminate, very entire; common petiole not winged; panicles loose, slender, subterminal, on long peduncles. *Beck, Bot. p.* 76.
R. toxicodendron vernix. *Marsh. Arbust. p.* 130.
R. vernix. *L. and the other Authors quoted in this work.*

POISONOUS RHUS. *Vulgò*—Poison Sumach. Swamp Sumach.

Stem 8 to 12 or 15 feet high, branching above; young branches terete, smooth, slightly verrucose, or dotted. *Leaves* pinnate; *leaflets* in 3 to 5 or 6 pairs with a terminal odd one, 2 to 3 or 3 and a half inches long, and 3 fourths of an inch to an inch and half wide, very entire and slightly revolute on the margin, smooth above, somewhat pilose and reticulately veined beneath, all except the terminal one subsessile, or tapering at base to a very short petiole; *common petiole* 4 to 10 or 12 inches long, terete, smooth, often becoming purple. *Flowers* greenish, dioicous by abortion. *Panicles* slender, racemose, on long peduncles in the axils of the leaves, near the ends of the young branches; *pedicels* pubescent, bracteate. *Drupe* subglobose, nearly twice as large as in any of the preceding, dry, smooth, shining, pale yellowish green; *nut* suborbicular, compressed, ridged and grooved on the sides; *pedicels* of the fruit subclavate.

Hab. Low grounds; margins of rivulets: not common. *Fl.* June. *Fr.* Sept.

Obs. This shrub is not very common, here; but occurs near West-town School, and in several localities in the Mica-slate range, along rivulets. It is very poisonous to some persons,—though I have never felt the slightest effect from any of the genus. It seems to be now determined that our plant is distinct from the original R. *vernix* (*R. vernicifera, DC.*), or *Varnish-tree*, of Japan.

†† *Leaves ternate.*

5. R. RADICANS, *L.* Stem climbing by radicating processes; leaflets obliquely ovate, acuminate, entire, or angular-dentate; panicles racemose, axillary, subsessile. *Beck, Bot. p.* 75.
R. toxicodendron radicans. *Marsh. Arbust. p.* 131.
R. toxicodendron, *var.* vulgare. *Mx. Am.* 1. *p.* 183. *Pursh, Am. b. p.* 205.

R. toxicodendron, *var.* radicans. *Torr. Fl.* 1. *p.* 324. *Ejusd. Comp. p.* 140. *Lindl. Ency. p.* 226. *Eat. Man. p.* 303.

Radicating Rhus. *Vulgò*—Poison-vine. Poison-oak.

Stem 8 or 10 to 30 or 40 feet long, slender, branching, climbing, and closely adhering to trees, and other objects, by numerous radicating processes. *Leaves* ternate; *common petiole* 3 to 6 inches long, subterete, striate, pubescent. *Leaflets* 3 to 6 inches long, and 2 to 4 inches wide,—the terminal one broad-oval, on a petiole 1 to 2 inches long, the lateral ones somewhat rhomboid, or obliquely ovate, on very short petioles,—all acuminate, abruptly acute at base, entire, or with a few coarse angular teeth, nearly smooth above, somewhat pilose beneath, and ciliate on the margin *Flowers* yellowish green, dioicous by abortion. *Panicles* slender, racemose, on short peduncles in the axils of the leaves on the young branches; *pedicels* pubescent, bracteate at base. *Drupe* subglobose, about the size of the preceding, dry, smooth, shining, pale brown.

Hab. Woodlands, and old fence-rows: frequent. *Fl.* May—June. *Fr.* Sept.

Obs. This species is also poisonous to many persons. The R. *toxicodendron*, which *Nuttall* considers distinct, and *Torrey* and others only a *variety*, I think has not yet been found in Chester County. Three or four additional species are enumerated in the U. States.

160. STAPHYLEA. *L. Nutt. Gen.* 293.

[Greek, *Staphyle*, a bunch, or cluster; in allusion to its mode of flowering.]

Calyx 5-parted, the base within covered by an urceolate disk; segments oblong, concave, colored. *Petals* 5, alternating with the calyx-segments. *Stamens* alternating with the petals. *Styles* 2 or 3, often united. *Ovary* 2 or 3-lobed. *Capsule* 2 or 3-celled; cells membranaceous, inflated, more or less connate, opening internally. *Seeds* few, subglobose, bony.

Shrubs: Leaves opposite, compound, ternate, or odd-pinnate, stipular; flowers in paniculate racemes. *Nat. Ord.* 97. *Lindl.* Staphyleaceæ.

1. S. trifolia, *L.* Leaves ternate, on long petioles; leaflets ovate, acuminate, serrulate, pubescent, the terminal one petiolate; styles glabrous; capsules bladder-like. *Beck, Bot. p.* 73.
S. trifoliata. *Marsh. Arbust. p.* 148.

Three-leaved Staphylea. *Vulgò*—Bladder-nut.

Stem 6 to 12 feet high, with smooth slender branches. *Leaves* trifoliate, on pubescent petioles 2 to 4 inches in length, with 2 lance-linear membranous colored villose caducous *stipules* at base; *leaflets* 2 to 3 inches long, and 1 to 2 inches wide, ovate, or oval, acuminate, finely and regularly serrate, often unequal at base, quite pubescent when young, the terminal one on a petiole half an inch to an inch or more in length, the lateral ones subsessile, or on short petioles. *Flowers* in pendulous paniculate racemes, composed of opposite fascicles, terminal and axillary; *pedicels* bracteate at base. *Calyx-segments* oblong, connivent. *Petals* white, spatulate-obovate, a little longer than the calyx, ciliate at base. *Stamens* a little exserted. *Styles* 3, cohering, smooth, as long as the stamens. *Ovary* hirsute, conical 3-parted, seated on the fleshy cup-like disk in the bottom of the calyx. *Capsule* near 2 inches long, and an inch or more in diameter, inflated, trigonous-obovoid, membranous, reticulately veined, mostly 3-lobed at apex; lobes acuminate, mucronate, opening on the inner side. *Seeds* 1 to 3, obovoid, a little gibbous on one side of the *hilum*, or scar, pale brown, smooth and shining.

Hab. Rich moist woodlands; Brandywine: not common. *Fl.* May. *Fr.* Sept.

Obs. The only species in the U. States.

[Stellaria media. *Decandria Trigynia.*]

[Hypericum Sarothra. *Polyandria Di- Pentagynia.*]

Order 5. Pentagynia.

161. ARALIA. *L. Nutt. Gen.* 297.

[A name of unknown derivation; supposed to be of Canadian origin.]

Calyx with the limb short, 5-toothed, or entire. *Petals* 5, with the apex free and expanded. *Styles* spreading, persistent. *Ovary* inferior. *Berry* mostly 5-celled, and 5-seeded, often torose.

Herbaceous, or shrubby: leaves compound; flowers in umbels, or compound umbellate racemes. *Nat. Ord.* 1. *Lindl.* ARALIACEÆ.

1. A. NUDICAULIS, *L.* Stem very short, or none; leaf mostly solitary, radical, triquinate; leaflets ovate, or oblong-oval, acuminate, serrate; scape shorter than the leaf, naked, trifid at summit; umbels 3, on long peduncles, without involucres. *Beck, Bot. p.* 151.

NAKED-STEM ARALIA. *Vulgò*—Sarsaparilla. Wild Spikenard.

Root perennial, creeping, thick, somewhat aromatic. *Stem* scarcely more than the naked crown of the root. *Leaf* generally solitary, from the root; *petiole* erect, 6 to 12 inches long, 3-parted at summit, each division or secondary petiole 2 to 4 or 5 inches long, usually bearing 5 leaflets; *leaflets* odd-pinnate, usually 2 to 4 inches long, and 1 to 2 inches wide (sometimes nearly twice that size), sessile, or on short petioles, smooth. *Scape* 4 to 6 or 8 inches long, arising from the crown of the root, with sheathing stipules at base, divided at summit into 3 smoothish peduncles about 2 inches long, each bearing a naked many-flowered globose umbel, an inch to an inch and a half in diameter. *Calyx* with 5 small acute teeth. *Petals* greenish white, oblong, rather obtuse. *Stamens* longer than the petals. *Styles* distinct, somewhat spreading, nearly as long as the ovary; *stigmas* small. *Berries* dark purple or purplish black at maturity, torose, when dry and shrunk becoming 5-angled and deeply sulcate. *Seeds* compressed, oval-oblong, obtuse, obliquely mucronate.

Hab. Rich, rocky woodlands: frequent. *Fl.* May. *Fr.* July.

Obs. The *root* of this has a somewhat aromatic but mawkish taste; and is often used as a substitute for the *Sarsaparilla* of the shops, in making popular diet-drinks. I consider both the original and the substitute to be very *innocent* medicines,—provided the symptoms of disease be not urgent!

2. A. RACEMOSA, *L.* Stem herbaceous, smooth, somewhat divaricately branching; petioles 3-parted; divisions ternate and quinate; leaflets cordate-ovate, acuminate, doubly serrate; racemes axillary, compound, paniculately umbellate; involucres small. *Beck, Bot. p.* 151.

RACEMOSE ARALIA. *Vulgò*—Spikenard.

Root perennial, thick, aromatic. *Stem* 3 to 5 feet high, branched; branches somewhat dichotomous, spreading. *Leaves* ternately and quinately decompounded; *leaflets* 3 to 6 or 8 inches long, and 2 to 4 or 5 inches wide, obliquely cordate-ovate, sprinkled with short hairs, mostly petiolate. *Racemes* large, paniculate,

composed of numerous small umbels; *peduncles* pubescent, bracteate at base. *Involucres* of several short subulate leaves. *Calyx* with 5 small acute teeth. *Petals* greenish white, lance-ovate, rather acute. *Styles* united; *stigmas* diverging, or recurved. *Berries* smaller than in the preceding species, dark purple when mature.

Hab. Rich woodlands; Brandywine hills: not common. *Fl.* July. *Fr.* Sept.

Obs. This species is not very common; but is occasionally to be met with in our richest woodlands, It has long been introduced into our gardens, as a medicinal plant,—the *root* and *berries* being considered stomachic, when used in alcoholic tincture. The *habit* of taking such medicines, however, is very perilous to the patient, and much "more honored in the breach, than in the observance." There are two other species in the U. States;—of which A. *spinosa* (*a stout prickly shrub*) has been introduced into this County, and is almost naturalized about some farm-houses,—particularly near Marshallton.

162. LINUM. *L. Nutt. Gen.* 299.

[Greek, *Linon*, or Celtic, *Llin*; the name for flax, or thread, in those languages.]

Calyx mostly of 5 sepals, slightly united at base, persistent. *Petals* 5, unguiculate. *Stamens* alternate with the petals, united at base in a hypogynous ring, with intermediate teeth. *Styles* mostly 5 (rarely 3). *Ovary* superior. *Capsule* subglobose, 10-valved, 10-celled. *Seeds* solitary, compressed, ovate.

Herbaceous, or suffruticose: leaves entire, without stipules; flowers pedunculate, solitary, somewhat paniculate, or corymbosely racemose; petals fugacious. *Nat. Ord.* 139. *Lindl.* LINEÆ.

1. L. VIRGINIANUM, *L.* Radical leaves opposite, spatulate; stem leaves alternate, oblong-lanceolate; panicle corymbose, racemose, leafy; flowers yellow, on short pedicels; capsules depressed-globose. *Beck, Bot. p.* 56.
L. virginicum. *Pursh, Am.* 1. *p.* 210. *Nutt. Gen.* 1. *p.* 206. *Bart. Phil.* 1. *p.* 157.

VIRGINIAN LINUM. *Vulgò*—Wild Flax.

Root perennial? *Stem* 1 to 2 feet high (often 3 or 4 stems from the same root), slender, slightly angular by the decurrence of the leaves and midribs, smooth, corymbosely branched towards the summit, and often with short *stolones*, or sucker-like branches at the root. *Radical leaves* about 1 third of an inch long, opposite, spatulate-obovate, pellucid-punctate; *stem-leaves* 3 fourths of an inch to an inch long, and 1 fourth to 1 third of an inch wide, alternate, sessile, lance-oblong, or oblanceolate, acute, smooth, slightly scabrous on the margin. *Flowers* small, on pedicels 1 or 2 lines long, racemose on the branches, somewhat secund, being often alternately axillary and opposite the leaves. *Sepals* lance-ovate, acuminate, keeled. *Petals* pale yellow, obovate. *Capsule* depressed-globose, with 5 principal valves, and each valve again splitting in two.

Hab. Old fields, and open woodlands: frequent. *Fl.* July. *Fr.* August.

Obs. Authors generally describe the root as *annual*; but I believe *Muhlenberg* and *Bigelow* are more correct, in calling it *perennial*.

2. L. USITATISSIMUM, L. *Leaves lance-linear, very acute; panicle loose, corymbose; flowers blue, on long pedicels; capsules globose, mucronate.* Beck, Bot. p. 56.

Most useful, or usual Linum. Vulgò—*Flax. Common Flax.* Gallicè—*Lin.* Germanicè—*Gemeiner Flachs.* Hispanicè—*Lino.*

Root *annual.* Stem 2 *to* 3 *feet high, mostly solitary, simple, terete, smooth, corymbosely branching at summit.* Leaves *numerous, scattered, an inch to an inch and half long, about a line wide, very acute, often* 3-*nerved.* Flowers *large, on pedicels an inch to an inch and half long, axillary, or opposite the leaves.* Sepals *ovate-oblong, acuminate,* 3-*nerved.* Petals *blue, often with a tinge of purple, obovate, crenate,* 3 *times as long as the calyx.* Capsule *globose, abruptly acuminate, smooth.* Seed *compressed, lance-ovate, slightly oblique at apex, brown, smooth and shining.*

Hab. *Fields, and lots: not common.* Fl. *June.* Fr. *July.*

Obs. *This valuable plant, once considered so indispensable among the crops of our farmers, is now but little cultivated, here; its linty product being superseded by the cotton of the South. It is a crop which involves a good deal of troublesome labor, and, without being profitable, is generally believed to be injurious to the soil; an opinion as old as the time of* Virgil,—*who says*

"Urit enim Lini campum seges, urit avenæ. Georg. I. 71.

The seeds *beside yielding a most valuable oil, afford one of the best mucilaginous drinks, for coughs, and dysenteric affections. Two or three other species are enumerated in the U. States.*

163. DROSERA. *L. Nutt. Gen.* 218.

[Greek, *Drosos*, dew; from the pellucid dew-like glands on the leaves.]

Calyx 5-parted, persistent. *Petals* 5. *Styles* 3 to 5 or 6, bipartite. *Ovary* superior. *Capsule* 1 to 3-celled, 3 to 5 valved, many-seeded.

Herbaceous: mostly stemless; leaves alternate, mostly radical, glandular-ciliate; peduncles, when young, circinate. *Nat. Ord.* 137. *Lindl.* Droseraceæ.

1. D. rotundifolia, *L.* Leaves all radical, spreading, suborbicular, fringed with purple ciliæ, pilose above, abruptly tapering to a long hairy petiole; scape erect, bearing a terminal and mostly simple raceme; seeds arillate. *Beck, Bot. p.* 42.

Round-leaved Drosera. *Vulgò*— Sun-dew.

Gall.–Rosée du Soleil. *Germ.*–Der Sonnenthau. *Hisp.*–Rocio del Sol.

Root perennial? (annual, *DC.*). *Leaves* one fourth to half an inch in length, and as wide as long, nearly orbicular, sometimes rather spatulate, fringed with long purple *ciliæ* which are glandular-viscid at apex and dilated at base, glandular-pilose above, smoothish beneath, abruptly narrowed to a hairy *petiole* 1 to 2 inches long. *Scape* mostly solitary (sometimes 2 or 3 from the same root), 4 to 6 or 8 inches high, slender, smooth. *Raceme* 1 to 2 inches long, terminal, mostly simple (sometimes bifid, rarely trifid), secund, at first circinate, or recurved, finally erect; *pedicels* short, with minute subulate *bracts* at base. *Calyx segments* linear-oblong, obtuse, purplish green, smooth. *Petals* white, oblong, obtuse, shrivelling on the ovary. *Styles* 5 to 6, very short; *stigmas* simple. *Capsule* oblong, longer than the calyx. [*Seeds* very numerous, attenuate at each extremity. *Torr. Seeds* arillate. *DC.*]

Hab. Swamps, in the Mica-Slate range: not common. *Fl.* July. *Fr.*

Obs. This was first collected, here, by Mr. Joseph Jacobs,—an active and skillful Botanist,—to whom I am indebted for information respecting the localities of a number of our rarer plants. Two other species are found in the U. States.

CLASS VI. HEXANDRIA.

Order 1. Monogynia.

A. Flowers complete.

164. FLOERKEA. *Willd. Nutt. Gen.* 337.
[Dedicated to a German Botanist, of the name of *Floerke. fide Raf.*]

Calyx 3-parted, persistent. *Petals* 3, much shorter than the calyx. *Ovary* superior, 2 or 3-lobed; *style* scarcely longer than the lobes; *stigma* bifid. *Akenes*, or *utricles*, mostly twin, roundish-obovoid, tuberculate.

Herbaceous, succulent and tender; leaves alternate, petiolate, pseudo-pinnate; flowers axillary, solitary, pedunculate. *Nat. Ord.* 72. *Lindl.*. Sanguisorbeæ ?

1. F. uliginosa, *Muhl.* Glabrous; stem terete; leaves trifid and quinate-pinnatifid, segments lance-oblong, entire. *Beck, Bot. p.* 19.
F. lacustris. *Pers. Syn.* 1. *p.* 393.
F. palustris. *Nutt. Gen.* 1. *p.* 229. *Bart. Phil.* 1. *p.* 171.
Nectris pinnata. *Pursh, Am.* 1. *p.* 239.

Miry, or Marsh Floerkea. *Vulgò*—False Mermaid.

Plant pale or yellowish green. *Root* annual, fibrous. *Stem* 4 to 10 or 12 inches long, flaccid, erect or decumbent, finally procumbent, nearly simple, *Leaves* pinnately dissected; lower ones often 3-parted, upper ones mostly quinate-pinnate; *segments* half an inch to an inch long, and 1 eighth to 1 fourth of an inch wide, sessile, or subsessile, rather acute, with irregularly branching and reticulated nerves, the lateral segments often deeply bifid, sometimes trifid, cuneate at base, and narrowed to a short petiole; *common petioles* 1 to 3 inches in length. *Peduncles* axillary, recurved or nodding, at first short, finally about an inch long. *Calyx* deeply 3-parted (rarely 4-parted); segments erect, lance-ovate, acuminate. *Petals* white, lance-oblong, very small, alternate with and scarcely half as long as the calyx-segments. *Stamens* shorter than the petals; the alternate *filaments* dilated at base, or articulated to a flat tooth-like process. *Ovary* mostly of 2 (sometimes 3) obovoid-oblong lobes. *Style* inserted between the lobes of the ovary, and about their length; *stigma* bifid (trifid, *Lindl.*). *Fruit* mostly of 2 subglobose *akenes*, or utricles (sometimes 1), with a subcoriaceous verrucose or tuberculate coat.

Hab. Miry, shaded places; Brandywine: frequent. *Fl.* April-May. *Fr.* May-June.

Obs. Dr. *Torrey*, in the appendix to *Lindley's* Introduction to the Natural System of Botany, places this, hesitatingly, in the *Nat. Ord.* 7. *Lindl.* Hydropeltideæ: But, in *Hooker's* Botanical Journal, 1834, Mr. *Lindley* expresses the opinion that it must take its place among, or near, the Sanguisorbeæ. It is a tender fugacious plant,—disappearing early in the season. By the last of June, it is difficult to find a vestige of it. No other species has yet been ascertained.

165. TRADESCANTIA. *L. Nutt. Gen.* 303.
[In honor of two English Botanists, Father and Son, named *John Tradescant.*]

Calyx of 3 sepals, persistent. *Petals* 3. *Filaments* villose; the hairs jointed, or moniliform. *Ovary* superior. *Capeule* 3-celled, 3-valved, few-seeded.

Herbaceous: leaves alternate, simple, usually sessile, and sheathing at base. *Nat. Ord.* 232. *Lindl.* Commelineæ.

1. T. VIRGINICA, *L.* Stem erect, sometimes branching; leaves lance-linear, channelled above, glabrous; flowers in a terminal subumbellate cluster; calyx pubescent. *Beck, Bot. p.* 376. Icon, *Bart. Am.* 2. *tab.* 41.

VIRGINIAN TRADESCANTIA. *Vulgò*—Spider-wort.

Root perennial, creeping. *Stem* 12 to 18 inches high (often in bunches, or several from the same root), very smooth. *Leaves* 12 to 18 inches long, and half an inch to an inch wide, acute, with parallel nerves, amplexicaul at base, slightly ciliate on the margin. *Flowers* in a terminal cluster, with a large 2- (rarely 3-)leaved *involucre* at base, resembling the leaves; *pedicels* half an inch to an inch long, pubescent,—after flowering, parted into 2 ranks, and deflected, or recurved, on each side, over the base of the involucre. *Sepals* lance-ovate, rather acute, externally pilose. *Petals* blue, often tinged with purple, ovate, veined, thin and membranaceous, nearly twice as long as the calyx. *Stamens* shorter than the corolla; *filaments* densely clothed with blue hairs, which appear beautifully jointed, or moniliform, under a lens; *anthers* yellow, large, recurved, or crescent-shaped. *Style* filiform, as long as the stamens; *stigma* capitate. [*Capsule* obtusely triangular, 3-celled, 3-valved, covered by the calyx. *Seeds* 2 or 3 in each cell, compressed, angular. *Torr.*]

Hab. Moist low grounds; meadows, &c. frequent. *Fl.* May—June. *Fr.*

Obs. I have not had an opportunity to examine the *fruit* of this plant; and I think it is very apt to be abortive, in this vicinity. The stem is succulent, and remarkably filled with a slimy mucilage,—probably worthy of notice as an emollient application. One other species is known in the U. States; and *Muhlenberg* enumerates a third.

166. LEONTICE. *L. DC. Prodr.* 1. *p.* 109.

[Gr. abridged from *Leontopetalon*; the leaf resembling the print of a Lion's foot.]

Calyx of 3 to 6 sepals, naked externally. *Petals* 6, unguiculate, with a scale on each claw. *Ovary* superior, ventricose-obovoid, obliquely beaked. *Seeds* 2 to 4, globose, inserted in the bottom of the *capsule*, which is ruptured at an early period, and each naked drupe-like seed elevated on its clavate *funiculus*.

Herbaceous: stem apparently branching into petioles at summit; leaves compound, bi- or tri-ternate; peduncles at the subdivisions of the petioles; flowers in paniculate racemes. *Nat. Ord.* 22. *Lindl.* BERBERIDEÆ.

1. L. THALICTROIDES, *L.* Lower leaf triternate, upper one biternate; leaflets oblong-ovate and cuneate-obovate, mostly 3-lobed at apex; flowers paniculate; peduncle from the base of the upper petioles. *Beck, Bot. p.* 17.

Caulophyllum thalictroides. *Mx. Am.* 1. *p.* 205. Icon, *tab.* 21. *Pers. Syn.* 1. *p.* 387. *Pursh, Am.* 1. *p.* 218. *Nutt. Gen.* 1. *p.* 210. *Bart. Phil.* 1. *p.* 160. *Ell. Sk.* 1. *p.* 411. *Florul. Cestr. p.* 39. *Lindl. Ency. p.* 286. *Eat. Man. p.* 85.

THALICTRUM-LIKE LEONTICE. *Vulgò*—Blue Cohosh. Pappoose-root.

Whole plant glabrous, purplish and glaucous when young. *Root* perennial. *Stem* 12 to 18 inches high, generally 2-leaved; the lower leaf mostly triternate (bearing 27 leaflets), usually with a common petiole, and the 3 primary divisions long, the upper leaf biternate (bearing 9 leaflets), without a common petiole; *leaflets* 2 to 3 inches long, and 1 to 2 inches wide, varying from obliquely-ovate to ob-

long and cuneate-obovate, incisely lobed at apex; lobes mostly 3 (sometimes 2, and occasionally a deeper division), lance-ovate, acute or acuminate; terminal leaflet petiolate, lateral ones sessile, or subsessile. *Panicle* loose and racemose, on a peduncle 2 to 3 inches long, proceeding from the base of the petioles,—often a second, smaller panicle, by the side of the principal one; *pedicels* half an inch to near an inch long, with small subulate *bracts* at base. *Calyx* spreading; sepals 2 or 3 to 6 (sometimes wanting, *Torr.*), unequal, lance-oblong. *Petals* greenish yellow, twice as long as the sepals, obovate-lanceolate, 3 to 5-nerved, unguiculate, with a subreniform viscid scale at the base of each claw. *Stamens* short. *Ovary* 2-seeded, obovoid, obliquely beaked by the style. *Seeds* speedily bursting from the young membranous capsule, and, pushing it on one side, become elevated in naked pairs (1 of which is often abortive,) on the erect clavate *stipes*, or *funiculi* which attach them to the bottom of the capsule. When mature, the seeds are 1 third of an inch in diameter, globose, drupe-like, and of a deep blue color.

Hab. Rich woodlands; Brandywine, &c. frequent. *Fl.* April—May. *Fr.* Aug.

Obs. This plant,—so remarkable for the structure of the fruit, and the process by which it is developed, (first observed by that distinguished and sagacious Botanist, *Robert Brown*),—was formerly a noted article in the Materia Medica of the Aborigines; but its virtues, if any, are very little attended to, at present. It is the only species of the genus, in the U. States.

167. PRINOS. *L. Nutt. Gen.* 308.

[Supposed to be from the Greek, *Prio*, to saw; in allusion to its serrated leaves.]

Dioicously Polygamous: *Calyx* small, mostly 6-cleft. *Corolla* monopetalous, subrotate, mostly 6-parted. *Ovary* superior. *Berry* 6-seeded; *seeds* nuciform.

Shrubs: leaves alternate, deciduous, or persistent; pedicels 1-flowered, axillary. *Nat. Ord.* 166. *Lindl.* Ilicineæ.

1. P. verticillatus, *L.* Leaves deciduous, oval and obovate, acuminate, serrate, pubescent beneath; sterile flowers subumbellate; fertile flowers aggregated. *Beck, Bot. p.* 230.
P. Gronovii. *Mx. Am.* 2. *p.* 236.

Verticillate Prinos. *Vulgò*—Black Alder. Winter-berry.

Stem 6 to 8 feet high, much branched. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, with prominent nerves beneath; serratures mucronate, somewhat uncinate; *petioles* about half an inch long. *Flowers* greenish white, dioicous by abortion. *Sterile flowers* in pedunculate subumbellate clusters; *common peduncle* rather longer than the pedicels. *Corolla* often 5 or 7-parted. *Stamens* often 5, or 7. *Ovary* abortive. *Fertile flowers* in smaller clusters than the sterile, mostly perfect? *common peduncle* very short, or none; *pedicels* scarcely 1-fourth of an inch long. *Berries* globose, 1 fourth of an inch in diameter, in small axillary persistent clusters, appearing somewhat verticillate, bright red when mature.

Hab. Low swampy grounds, and thickets: frequent. *Fl.* June. *Fr.* October.

Obs. The *bark* of this, used in decoction, is a popular remedy for ill-conditioned sores. It is administered both externally and internally; but I believe its virtues are over-rated. Five or six additional species are enumerated in the U. States.

B. FLOWERS INCOMPLETE.

a. *Perianth corolla-like.* † *Flowers with a Spathe.*

168. PONTEDERIA. *L. Nutt. Gen.* 315.
[In honor of *Julius Pontedera*, Professor of Botany at Padua.]

Perianth tubular, 6-cleft, bilabiate; under side of the tube perforated with 3 longitudinal clefts; the base or lower half calycine, persistent. *Stamens* unequally inserted, 3 near the base, and 3 near the summit, of the tube. *Ovary* superior. *Utricle* muricate, 1-seeded.

Herbaceous aquatics: leaves chiefly radical, sheathing at base, with parallel veins; flowers mostly in spikes. *Nat. Ord.* 246. *Lindl.* PONTEDEREÆ.

1. P. CORDATA, *L.* Leaves subradical, sagittate-cordate; flowers in crowded spikes. *Beck, Bot. p.* 368.
CORDATE PONTEDERIA. *Vulgò*—Pickerel weed.

Root perennial, fasciculate. *Leaves* 4 to 6 or 8 inches long, and 2 to 4 inches wide, tapering to the apex, but rather obtuse, entire, sagittate-cordate at base, petiolate, glabrous, somewhat fleshy. *Scape* 1 to 2 feet long, bearing one leaf, with the base of the petiole tubular and sheathing. *Spathe* oblong, just below the spike, sheathing the stout pubescent peduncle. *Flowers* sessile, aggregated by twos and threes, in a terminal spike about 3 inches in length. *Perianth* with the limb bright blue, bilabiate; upper lip flat, 3-cleft, lobes oblong, one of them with a yellowish spot in the centre; lower lip deeply 3-parted, lobes linear-oblong; tube greenish, calyx-like, curved, pubescent, with 3 gashes, or slits, on the inner curve. *Stamens* about as long as the perianth. *Style* shorter than the stamens. *Utricle* covered by the persistent base of the perianth, with 6 crested undulate ridges.

Hab. Margin of the Schuylkill, at Black Rock: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. This has only been found along the Schuylkill, in this County,—where it was collected by Mr. JOHN MARSHALL, in 1829. It is very abundant in the marshes, along the tide waters. One or two other species have been enumerated in the United States; which, however, Dr. *Torrey* considers as nothing more than *varieties*.

169. ALLIUM. *L. Nutt. Gen.* 247.
[Supposed to be from the Celtic, *All;* signifying hot, or acrid.]

Perianth 6-parted, generally spreading. *Filaments* sometimes tricuspidate. *Ovary* superior. *Capsule* 3-celled, 3-valved, few-seeded. *Spathe* membranaceous.

Herbaceous: strongly odorous, when bruised; bulbous at the root; leaves fistular, or flat; flowers in a dense terminal umbel, or head; umbel in some species bulbiferous. *Nat. ord.* 247. *Lindl.* ASPHODELEÆ.

* *Leaves fistular and terete.*

1. A. VINEALE, *L.* Stem somewhat leafy; umbel often bulbiferous; filaments alternately tricuspidate. *Beck, Bot. p.* 363.
VINE ALLIUM. *Vulgò*—Garlic. Field Garlic. Crow Garlic.
Gallicè—Ail des Vignes. *Germanicè*—Acker Lauch.

Perennial? *Bulb* ovoid, small. *Stem* 2 to 3 feet high, slender, smooth, bearing a few leaves. *Leaves* 8 to 12 or 15 inches long, sheathing at base. *Spathe* of 2 rather small deciduous leaves, acuminate. *Umbel* globose, about an inch in diameter (smaller, dense and capitate, when bearing bulbs); *pedicels* filiform, clavate. *Perianth* deep purple, tinged with green. *Stamens* exserted; *filaments* flatted, the alternate ones deeply trifid, bearing the anther on the middle filiform segment. *Capsule* trigonous, membranaceous.

Hab. Pastures, and cultivated grounds: common. *Fl.* June. *Fr.* Aug.

Obs. Are not these plants rather *biennial*, than perennial? It seems to me that new lateral bulbs are propagated every year, and that the old ones die, after once sending up a stem, and flowering. This species is a naturalized foreigner; and was formerly so abundant in this County, as to be quite a nuisance. It not only imparted a disgusting flavor to milk, butter, cheese, &c. but seriously injured our flour, and rendered the manufacture of it difficult. Our best farmers, however, have now nearly subdued it, by the improvement of their land, and a judicious rotation of crops.

2. A. Schœnoprasum, L. *Scape naked, about as tall as the terete subulate-filiform leaves; filaments simple.* Willd. Sp. 2. p. 81.

Vulgò—*Chives*, or *Cives*.

Gallicè—*Ciboulette*. Germanicè—*Der Binsen Lauch*. Hisp. *Cebollino*.

Growing in bunches. Bulbs *small*. Scape 6 *to* 9 *inches high, smooth*. Leaves *erect, nearly as long as the scape*. Umbel *subglobose, about an inch in diameter*. Spathe *of* 2 *ovate membranaceous nerved purplish leaves*. Perianth *purple, with a tinge of violet*. Stamens *shorter than the perianth*.

Hab. *Gardens: frequent*. Fl. *July*. Fr. *September*.

Obs. *Cultivated as a culinary herb; and often used as a kind of medicinal food, for young poultry*.

3. A. Cepa, L. *Scape naked, ventricose below, much taller than the subterete leaves; filaments nearly simple.* Willd. Sp. 2. p. 80.

Vulgò—*Onion. Garden onion.*

Gallicè—*Oignon*. Germanicè—*Die Zwiebel*. Hispanicè—*Cebolla*.

Bulb *depressed, orbicular, large* (2 *to* 3 *inches in its horizontal diameter*). Scape 2 *to* 3 *feet high, ventricose towards the base, often an inch or more in diameter in the thickest part, smooth, glaucous*. Leaves 6 *inches to a foot or more in length*. Umbel *globose*, 2 *to* 3 *inches in diameter*; pedicels *filiform*. Spathe *greenish white*. *Segments of the* Perianth *lance-oblong, white, with a green keel*. Stamens *longer than the perianth, the alternate* filaments *much dilated at base, obscurely trifid, or obtusely toothed on each side*. Seed *angular, bluish black, roughish-punctate under a lens*.

Hab. *Gardens: common*. Fl. *July*. Fr. *September*.

Obs. *Well known, and extensively cultivated, as an article of food. The expressed juice is a popular remedy for* Cynanche trachealis, *or* Croup.

* * *Leaves flat.*

4. A. sativum, L. *Stem leafy below; umbel capitate, bulbiferous; filaments alternately trifid.* Willd. Sp. 2. p. 68.

Common Allium. Vulgò—*English Garlic*.

Gallicè—*L'Ail*. Germanicè—*Der Lauch*. Hispanicè—*Ajo*.

Growing in bunches. Bulbs *compound, small.* Stem 1 *to* 2 *feet high, smooth, with erect sheathing leaves on the lower half. Leaves* 9 *to* 15 *inches long, linear-lanceolate, acute, flat and grass-like, striate, smooth.* Spathe *of* 2 *membranaceous leaves, ovate, with a long acumination.* Head *bearing numerous spathaceous bulbs.* Perianth *pale purple.*

Hab. *Gardens: frequent.* Fl. *July.* Fr. *September.*

Obs. *Esteemed medicinal, as a vermifuge, &c. and often cultivated for that object.*

5. A. CANADENSE, *L.* Scape terete, naked, or leafy at base only; umbel capitate, bulbiferous; filaments simple. *Beck, Bot. p.* 363.
Also? A. striatum. *Pursh, Am.* 1. *p.* 222. *Nutt. Gen.* 1. *p.* 214. *Ell. Sk.* 1. *p.* 385. *Eat. Man. p.* 12. Not? of *Willd. & Pers.*

CANADIAN ALLIUM. *Vulgò*—Meadow Garlic.

Bulb ovoid, small. *Scape* 12 to 18 inches high, smooth, with a few sheathing leaves at base. *Leaves* 6 to 12 inches long, nearly linear, rather obtuse, flat above, a little convex beneath, striate, smooth. *Spathe* of 2 membranaceous nerved ovate acuminate leaves. *Umbel* bearing both bulbs and flowers; the flowers on slender pedicels half an inch to an inch and half long (often abortive?). *Perianth* pale purple. *Stamens* about as long as the perianth.

Hab. Moist meadows, and flats; Brandywine: frequent. *Fl.* May—June. *Fr.* Aug.

6. A. TRICOCCUM, *Ait.* Scape subterete, naked; leaves lance-oblong, broad; umbel globose; filaments simple; seeds solitary. *Beck, Bot. p.* 363.

THREE-BERRIED, OR THREE-SEEDED ALLIUM.

Bulb oblong-ovoid, acuminate, rather large. *Leaves* 5 to 8 inches long, and an inch and half to 3 inches wide, often somewhat elliptic-lanceolate, acute, tapering to a petiole at base, striate-veined, glabrous, becoming membranaceous when dry. *Scape* 9 to 12 inches high, often a little compressed or ancipital, striate, smooth. *Spathe* of 2 membranaceous lance-ovate acuminate leaves (1-leaved, *Torr.*), whitish, with green nerves, deciduous. *Umbel* globose, an inch and half to 2 inches in diameter; *pedicels* sulcate, or acutely angled, subclavate. *Perianth* white. *Stamens* about as long as the perianth; *filaments* dilated at base, ovate-lanceolate, keeled. *Style* as long as the stamens. *Capsule* coriaceous, green, obtusely trigonous, somewhat 3-lobed; cells 1-seeded. *Seeds* roundish-obovoid, bluish black, shining, obscurely punctate under a lens.

Hab. Moist, shaded grounds; Brandywine: not common. *Fl.* June-July. *Fr.* Aug.

Obs. This species,—which was first collected here, in 1828, by Dr. WILMER WORTHINGTON and H. H. VAN AMRINGE, Esq.—differs remarkably from all our other Alliums; and has much resemblance to A. *ursinum*, of Europe. The large leaves die, and disappear, early in the season—before the flowers are developed. The bulbs emit a fetid disagreeable odor, whilst drying. Three or four additional species are enumerated in the U. States.

†† *Flowers destitute of a Spathe.*

170. ALETRIS. *L. Nutt. Gen.* 317.

[Greek, *Aleiar*, meal; the flowers having a pulverulent or mealy appearance.]

Perianth tubular, ovoid-oblong, rugose, persistent, adnate to the ovary at base; limb 6-cleft. *Stamens* inserted at the orifice of the

tube. *Ovary* superior; *style* triquetrous, finally 3-parted. *Capsule* 3-celled, 3-valved (3 connate 1-celled capsules ?), opening partially at summit, many-seeded.

Herbaceous: leaves radical, entire, stellately spreading; scape simple; flowers in a terminal raceme, or spike. *Nat. Ord.* 247. *Lindl.* ASPHODELEÆ.

1. A. FARINOSA, *L.* Leaves lanceolate, acuminate, glabrous; flowers racemose, subsessile; perianth rugose-muricate. *Beck, Bot. p.* 364. A. alba. *Mx. Am.* 1. *p.* 189. *Pursh, Am.* 1. *p.* 226.

MEALY ALETRIS. *Vulgò*—Star Grass. Colic root.

Root perennial, truncated. *Leaves* spreading on the ground, 3 to 6 inches long, and half an inch to 3 quarters wide, with parallel nerves, pale yellowish green, and of a dry texture. *Scape* 2 to 3 feet high, terete, striate, smooth, with several small remote leaves, or *bracts*. *Raceme* 6 to 12 or 15 inches long; *flowers* numerous, but not crowded; *pedicels* very short, each with 1 or 2 subulate *bracts* at base scarcely half as long as the flowers. *Perianth* white, tubular, about 1 third of an inch long, minutely rugose-muricate externally, appearing as if covered with a rough powder; *segments* short, spreading, thickened and yellowish at the tip. *Stamens* very short, inserted at the base of the perianth-segments. *Ovary* ovoid, adnate at base to the perianth, tapering at apex to a triquetrous *style* (3 united styles ?) about as long as the perianth. *Capsule* coated with the rough persistent perianth, trigonous-ovoid, acuminate, 3-celled (resembling 3 connate capsules), opening at apex, and the persistent *style* separating into *three*, but often cohering at summit. *Seeds* numerous, minute, oblong, reddish, longitudinally striate with purple ribs.

Hab. Open grassy woodlands; borders of thickets: frequent: *Fl.* July. *Fr.* Sept.

Obs. The *root* of this is bitter; and has been used as a remedy for Intermittents. One other species has been enumerated in the U. States; but it seems to be scarcely more than a *variety*.

171. ASPARAGUS. *L. Nutt. Gen.* 332.

[Supposed from the Greek, *Asparagos*; a young shoot, or Turion. *Vide Lexicon.*]

Perianth 6-parted; segments linear-oblong, erect. *Ovary* superior, turbinate; *style* very short; *stigmas* 3. *Berry* 3-celled; cells 2-seeded.

Herbaceous, or fruticose: unarmed, or aculeate; leaves mostly fasciculate; flowers often solitary, and axillary. *Nat. Ord.* 247. *Lindl.* ASPHODELEÆ.

1. A. OFFICINALIS, L. *Unarmed; stem herbaceous, erect, much branched; leaves fasciculate, setaceous and flexible; peduncles articulated in the middle.* Beck, Bot. p. 363.

OFFICINAL ASPARAGUS. Vulgò—*Asparagus. Sparrow-grass.*

Gallicè—*Asperge.* Germanicè—*Der Spargel.* Hispanicè—*Esparrago.*

Root *perennial, creeping.* Stem 3 *to 6 feet high; the turions, or young shoots, at first simple, finally much branched, smooth.* Leaves *half an inch to an inch or more in length, very narrow, filiform, flat, acute, smooth, in fascicles of* 3 *to* 10 *or* 12, *with minute ovate acuminate scarious stipules at base.* Flowers *axillary, solitary, or in pairs;* peduncles *about half an inch long, slender, articulated near the middle.* Perianth *pale greenish yellow.* Berries *globose, slightly umbilicate, red when mature.*

Hab. *Gardens; common.* Fl. *June—July.* Fr. *September.*

Obs. *Generally cultivated, for its young shoots,—which afford a favorite dish, in the spring. A strong and peculiar odor is imparted to the urine, by eating them. There has been no native species found in the U. States.*

172. ORNITHOGALUM. *L. Nutt. Gen.* 323.

[Greek, *Ornis, ornithos*, a bird, and *Gala*, milk; an ancient whimsical name.]

Perianth deeply 6-parted; segments spreading above the middle. *Stamens* hypogynous; *filaments* dilated at base. *Ovary* superior. *Capsule* roundish, angular, 3-celled. *Seeds* roundish.

Herbaceous: root bulbiferous; leaves radical; scape naked, corymbose, or racemose. *Nat. Ord.* 247. *Lindl.* ASPHODELÆ.

1. O. UMBELLATUM, *L.* Corymb few-flowered; peduncles longer than the bracts; filaments subulate. *Beck, Bot. p.* 362.

UMBELLATE ORNITHOGALUM. *Vulgò*—Ten o'clock.

Gall.—Dame d'onze heures. *Germ*—Die Vogelmilch. *Hisp.* Ornitogalo.

Bulbs perennial? small, white. *Leaves* 6 to 10 or 12 inches long, narrow, linear, channelled, very smooth. *Scape* 6 to 8 or 10 inches high, terete, smooth. *Peduncles* alternate, corymbose, 1 to 2 inches long, each with a membranaceous linear-lanceolate acuminate *bract* at base. *Perianth* divided to the base; *segments* lance-oblong, white within, green externally, with a white margin. *Ovary* trigonous-turbinate, often abortive.

Hab. Pastures, and cultivated grounds: frequent. *Fl.* May—June. *Fr.* July.

Obs. This foreigner has escaped from the gardens, and has become a grievous nuisance on many farms. Although it rarely perfects its fruit, the bulbs are propagated laterally with great rapidity; and are extremely difficult to extirpate. One native species has been found in the U. States, on the Rocky Mountains.

173. HYPOXIS. *L. Nutt. Gen.* 314.

[Gr. *Hypo*, beneath, and *oxys*, sharp; alluding to the pointed base of the capsule.]

Perianth 6-parted, persistent. *Ovary* inferior. *Capsule* elongated, narrowed at base, 3-celled, many-seeded. *Seeds* roundish, naked.

Herbaceous: leaves radical, grass-like; scape few-flowered. *Nat. Ord.* 235. *Lindl.* HYPOXIDEÆ.

1. H. ERECTA, *L.* Pilose; leaves lance-linear, acuminate, longer than the scape; scape about 4-flowered, subumbellate. *Beck, Bot. p.* 355. ICON, *Bart. Am.* 1. *tab.* 35. *f.* 1.
H. carolinensis. *Mx. Am.* 1. *p.* 188.
Also, H. graminea. *Pursh, Am.* 1. *p.* 224. var. graminea. *Eat. Man. p.* 185.

ERECT HYPOXIS. *Vulgò*—Star of Bethlehem.

Root perennial, tuberous, with many coarse fibres. *Leaves* 9 to 15 inches long, grass-like, keeled, nerved, tapering to a subulate point, sprinkled with long hairs. *Scape* 4 to 8 or 10 inches high, slender, nerved, pilose, mostly 4-flowered (sometimes 1 or 2 flowered); *pedicels* corymbose, or subumbellate, unequal, half an inch to an inch or more in length, silky-villose, bracteate at base; *bracts* subulate, keeled, scarious on the margin. *Perianth* bright yellow within, hairy and yellowish green externally; *segments* lance-oblong, rather obtuse, spreading. *Stamens* much shorter than the perianth; *anthers* incumbent, bifid at each end. *Style*

about as long as the stamens ; *stigma* thick, 2-lobed ? glandular. [*Capsule* oblong, 3-celled, 3-valved, (indehiscent, *Lindl.*). *Seeds* numerous, ovate, angular, black. *Ell. Torr.*]

Hab. Open, grassy woodlands : common. *Fl.* May—Oct. *Fr.*

Obs. I have not had an opportunity to examine the fruit of this. Authors describe the genus as having a 2-valved *spathe* ; but I can perceive nothing about our plant, entitled to that name. Two other species are enumerated in the U. States.

174. POLYGONATUM. *Desf. Nutt. Gen.* 331.

[Greek, *Polys*, many, and *Gonu*, a knee, or joint ; from its many-jointed root.]

Perianth tubular, cylindrical, 6-cleft. *Stamens* inserted near the summit of the tube. *Ovary* superior. *Berry* subglobose, 3-celled; cells 2-seeded.

Herbaceous : stems simple, terete, or angular ; leaves alternate, simple, entire, with parallel nerves ; flowers axillary. *Nat. Ord.* 249. *Lindl.* SMILACEÆ.

1. P. MULTIFLORUM, *Desf.* Stem mostly terete, smooth ; leaves ovate-lanceolate, or lance-oval, amplexicaul ; peduncles 1- 2- or many-flowered. *Beck, Bot. p.* 359.

Also ? P. biflorum, *and* P. latifolium, *of Authors.*

Convallaria multiflora. *Willd. Sp.* 2. *p.* 162. *Mx. Am.* 1. *p.* 202. *Pers. Syn.* 1. *p.* 373. *Ait. Kew.* 2. *p.* 280. *Muhl. Catal. p.* 35. *Bigel. Bost. p.* 133. *Torr. Fl.* 1. *p.* 356. *Ejusd. Comp. p.* 155. *Eat. Man. p.* 104.

Also ? C. Polygonatum. *Muhl. l. c.*

MANY-FLOWERED POLYGONATUM. *Vulgò*—Solomon's Seal.

Gall. Sceau de Salomon. *Germ.* Die Weisswurz. *Hisp.* Sello de Salomon.

Root perennial, fibrous. *Rhizoma* (or subterraneous stem) large, fleshy, creeping horizontally, with the cicatrices of former stems on its upper side. *Stem* 1 or 2 to 4 feet high, a little curved and leaning, terete, or sometimes angular, striate, glabrous. *Leaves* 2 to 5 or 6 inches long, and 1 to 2 or 3 inches wide, varying from lance-oblong to oval and lance-ovate, acute, smooth, sessile, and more or less amplexicaul. *Peduncles* axillary, half an inch to 2 inches long, compressed, nodding, 2 or 3, to 6 or 8-flowered, with the flowers, when numerous, in pendulous fascicles. *pedicels* half an inch to an inch long. *Perianth* greenish white, half an inch to 3 quarters in length; *segments* a little spreading, greenish. *Style* rather shorter than the perianth. *Berry* globose, 1 third to near half an inch in diameter, dark blue, or bluish black, when mature.

Hab. Rich woodlands ; fence-rows, and ditch banks : frequent. *Fl.* June. *Fr.* Sept.

Obs. This plant varies considerably in size, and in the number of its flowers ; and I am now inclined to think that the P. *biflorum*, of Authors (P. *angustifolium*, *Pursh*),—although a pretty constant and obvious *variety*,—is hardly entitled to be made a distinct species. This latter is very common in our woodlands,—is of smaller growth, with narrower leaves, and rarely with more than 2 flowers on the axillary peduncles. In every other respect, I can perceive no material difference. Perhaps the P. *latifolium, Desf.* and the *Convallaria Polygonatum, Muhl.* (not ? of the European Botanists,) may also prove to be nothing more than *varieties* of the same plant. The young shoots, or *Turions*, of the large luxuriant specimens, are said to be a good substitute, at table, for *Asparagus*. Two or three additional species are enumerated in the U. States.

175. SMILACINA. *Desf.* *Nutt. Gen.* 330.
[A diminutive of *Smilax;* the name of another genus of plants.]

Perianth 4 or 6-parted, spreading. *Stamens* 4 or 6, divergent, attached to the base of the segments. *Ovary* superior. *Berry* globose, 2 or 3-celled.

Herbaceous: stems simple; leaves alternate, simple, entire, with parallel nerves; flowers terminal, racemose. *Nat. Ord.* 249. *Lindl.* SMILACEÆ.

1. S. BIFOLIA, *Desf.* Stem mostly 2-leaved; leaves cordate-oblong, acute, subsessile, glabrous; raceme simple; flowers tetrandrous. *Lindl. Ency. p.* 270.
S. canadensis. *Pursh, Am.* 1. *p.* 233. *Nutt. Gen.* 1. *p.* 225. *Bart. Phil.* 1. *p.* 167. *Bart. Am.* 2. *p.* 99. ICON, *tab.* 70. *f.* 1. *Florul. Cestr. p.* 41.
Convallaria bifolia. *Willd. Sp.* 2. *p.* 164. *Mx. Am.* 1. *p.* 201. *Pers. Syn.* 1. *p.* 373. *Ait. Kew.* 2. *p.* 280. *Muhl. Catal. p.* 35. *Bigel. Bost. p.* 132. *Torr. Fl.* 1. *p.* 353. *Ejusd. Comp. p.* 154. *Eat. Man. p.* 103.
Styrandra bifolia. *Beck, Bot. p.* 357.

TWO-LEAVED SMILACINA.

Root perennial, creeping. Stem 4 to 6 inches high, often geniculate at the insertion of the leaves. *Leaves* mostly 2 (sometimes 3), near the summit of the stem, about 2 inches long, and an inch to an inch and half wide, more or less cordate, acute or acuminate, glabrous, sessile, or on very short petioles. *Raceme* oblong, about an inch in length; *pedicels* mostly in pairs, spreading, about 1 fourth of an inch long, with minute ovate colored *bracts* at base. *Perianth* white, deeply 4-parted; *segments* ovate-oblong, mostly reflexed. *Stamens* 4. *Style* short; *stigma* slightly bifid? (slightly 3-lobed, *Torr.*). *Berry* small, globose, mucronate, pale red, speckled with purple spots when mature, mostly 1 or 2-seeded. *Seed* ovoid, of a horny texture.

Hab. Rivulets on the Valley hills; Wynn's meadows: rare. *Fl.* May. *Fr.* Aug.

Obs. Dr. *Beck* considers this generically distinct from the other species of *Smilacina;* but it appears to me to present about the same kind of exception which we find in *Euonymus, Gentiana,* &c. On the other hand, Drs. *Torrey* and *Bigelow* retain both *Polygonatum* and *Smilacina* as *sub-genera,* or sections of *Convallaria.* I have thought the middle course most eligible.

2. S. STELLATA, *Desf.* Leaves numerous, oval-lanceolate, acute, amplexicaul; raceme simple. *Beck, Bot. p.* 358.
Convallaria stellata. *Willd. Sp.* 2. *p.* 163. *Mx. Am.* 1. *p.* 202. *Pers. Syn.* 1. *p.* 373. *Ait. Kew.* 2. *p.* 280. *Muhl. Catal. p.* 35. *Bigel. Bost. p.* 133. *Torr. Fl.* 1. *p.* 354. *Ejusd. Comp. p.* 154. *Eat. Man. p.* 104.

STELLATE, OR STAR-LIKE SMILACINA.

Root perennial, creeping, somewhat tuberous. *Stem* 9 to 12 inches high, nearly terete, striate, smooth. *Leaves* about 9, 2 or 3 to 5 or 6 inches long, and an inch to an inch and half wide, often acuminately tapering towards the apex, sessile and amplexicaul, ciliate-scabrous on the margin, and minutely roughish-pubescent on the nerves beneath. *Raceme* simple, few-flowered; *pedicels* solitary, angular, minutely scabrous, with small lance-ovate colored *bracts* at base. *Perianth* white, deeply 6-parted; *segments* oval-oblong, spreading. *Style* short, triangular; *stigma* obscurely 3-lobed.
Hab. Along Parke's rivulet, Downingtown: rare. *Fl.* May—June. *Fr.*

Obs. This species, as yet, has been found with us only in the above locality, where it was collected, in 1830, by Mr. Joshua Hoopes. The *fruit* I have not seen.

3. S. racemosa, *Desf.* Leaves numerous, oblong-oval, acuminate, subsessile, nerved, pubescent; raceme compound, paniculate. *Beck, Bot. p.* 358.

Convallaria racemosa. *Willd. Sp.* 2. *p.* 163. *Mx. Am.* 1. *p.* 202. *Pers. Syn.* 1. *p.* 373. *Ait. Kew.* 2. *p.* 280. *Muhl. Catal. p.* 35. *Bigel. Bost. p.* 133. *Torr. Fl.* 1. *p.* 354. *Ej. Comp. p.* 154. *Eat. Man. p.* 104.

Racemose Smilacina. *Vulgò*—Wild Spikenard.

Root perennial, fibrous. *Rhizoma* creeping, jointed, with cicatrices at the joints. *Stem* 1 to 2 feet high, somewhat angular and flexuose, smooth below, slightly pubescent above. *Leaves* 4 to 6 inches long, and an inch and half to near 3 inches wide, conspicuously acuminate, many-nerved, with 3 more distinct than the others, sprinkled with very short hairs on the upper surface, pubescent beneath, and on the margin, contracted at base to a short margined petiole. *Raceme* 2 to 4 inches long, branching, oblong, or conical, many-flowered; branches alternate, roughish-pubescent; *pedicels* short, with minute *bracts* at base. *Perianth* yellowish white, deeply 6-parted; *segments* narrow, lance-oblong, spreading. *Stamens* rather longer than the perianth. *Ovary* ovoid, acuminate; *style* very short; *stigma* obscurely 3-lobed. *Berries* numerous, globose, pale red, semi-pellucid, speckled with purple spots when mature, rarely perfecting more than 2 seeds, and often but one. *Seed* subglobose, somewhat compressed.

Hab. Moist grounds; fence-rows, and woodlands: common. *Fl.* May. *Fr.* Sept.

Obs. The mature fruit has an aromatic and not unpleasant taste. Two or three additional species are enumerated in the U. States,—though the genus is not yet definitively settled.

176. UVULARIA. *L. Nutt. Gen.* 327.

[Latin; diminutive of *Uva*, a cluster; alluding, perhaps, to the inflorescence.]

Perianth deeply 6-parted; segments lance-oblong, acute, almost distinct at base, twice as long as the stamens. *Filaments* very short, dilated; *anthers* long, linear, erect, adnate to the filaments. *Ovary* superior; *style* trifid, longer than the stamens; *stigmas* recurved. *Capsule* 3-angled, 3-celled, 3-valved; valves septiferous in the middle. *Seeds* numerous, subglobose, arillate at the hilum. *Nutt.*

Herbaceous: leaves alternate, simple, with parallel nerves; peduncles axillary, 1-flowered. *Nat. Ord.* 215. *Lindl.* Melanthaceæ. (Smilaceæ. *Torr. Beck.*)

1. U. perfoliata, *L.* Leaves perfoliate, elliptic-lanceolate, mostly acute; perianth subcampanulate, tuberculate-scabrous within; anthers cuspidate; capsule truncate. *Beck, Bot. p.* 361. Icon, *Bart. Am.* 1. *tab.* 32.

Also? U. flava. *Pursh, Am.* 1. *p.* 231. *Nutt. Gen.* 1. *p.* 224. *Ell. Sk.* 1. *p.* 390. *Torr. Fl.* 1. *p.* 351. *Ejusd. Comp. p.* 153. *Lindl. Ency. p.* 270. *Beck, Bot. p.* 362. *Eat. Man. p.* 379.

Perfoliate Uvularia. *Vulgò*—Bell-wort.

Root perennial, fasciculate, fleshy. *Stem* 9 to 15 or 18 inches high, with sheathing stipules near the base, forked near the summit, terete, smooth. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, varying from ovate to elliptic and oblong-lanceolate, generally acute (obtuse, *Authors*), perfoliate near the base,

glabrous, the margins reflexed whilst young,—the base mostly rounded, sometimes slightly cordate. *Flowers* mostly solitary, subterminal, or near the fork of the stem, pendulous. *Perianth* pale yellow; *segments* about an inch long, rough with granular tubercles on the inside. *Capsule* truncate at apex, triangular-turbinate, angles sulcate, sides concave.

Hab. Moist woodlands, and meadows: frequent. *Fl.* May. *Fr.* August.

Obs. I have rarely, if ever, found the leaves *obtuse*. This plant is one of the popular, but probably good-for-nothing, remedies, among the frontier settlers, for the bite of the rattle-snake.

2. U. SESSILIFOLIA, *L.* Leaves sessile, lance-oval, acute at each end, glaucous beneath; segments of the perianth smooth within; capsule acute at each end, stipitate. *Beck, Bot. p.* 362. Icon, *Bart. Am.* 2. *tab.* 55. *f.* 1.

SESSILE-LEAVED UVULARIA.

Root perennial. *Stem* 9 to 12 inches high, slender, bifid at summit, mostly with a single flower on one of the branches. *Leaves* 1 to 2 inches long, and half an inch to near an inch wide, alternate,—the 2 lower leaves on the flower-bearing branch nearly opposite, with the *peduncle* opposite the lower one, and immediately beneath the other. *Perianth* pale yellow, or ochroleucous; segments 3 fourths of an inch long, smooth on the inside. *Capsule* triangular-obovoid, with prominent sharp angles, mucronate, tapering at base to a kind of stipe; peduncle about half an inch long.

Hab. Rich woodlands: frequent. *Fl.* May. *Fr.* August.

Obs. Two or three additional species are enumerated in the U. States.

177. ERYTHRONIUM. *L. Nutt. Gen.* 326.

[Greek, *Erythros*, red; perhaps from the purple spots, or stains, on the leaves.]

Perianth campanulate, deeply 6-parted; segments recurved; the three inner ones mostly with a tooth-like process on each side near the base, and a longitudinal groove in the middle. *Stamens* as long as the styles. *Ovary* superior. *Capsule* roundish, narrowed at base, or substipitate, 3-celled, 3-valved. *Seeds* numerous, ovoid, acuminate.

Herbaceous: leaves a single pair, subradical, sheathing the scape at base; scape 1-flowered. *Nat. Ord.* 251. *Lindl.* LILIACEÆ.

1. E. AMERICANUM, *Sm.* Leaves elliptic-lanceolate, involute at the apex, minutely punctate, spotted; segments of the perianth oblong-lanceolate, rather obtuse; style clavate, trigonous. *Beck, Bot. p.* 365. Icon, *Bart. Am.* 1. *tab.* 33.

E. Dens canis. *Willd. Sp.* 2. *p.* 96. *Mx. Am.* 1. *p.* 198. *Pers. Syn.* 1. *p.* 360.

E. lanceolatum. *Pursh, Am.* 1. *p.* 230.

AMERICAN ERYTHRONIUM. *Vulgò*—Dog's tooth Violet.

Root perennial, an ovoid scaly tuber, or solid bulb, rather deep in the ground. *Leaves* 3 to 6 inches long, and half an inch to an inch and half wide, smooth, shining, stained with purple spots, minutely and superficially punctate, the apex abruptly acuminate, involute, and thickened. *Scape* 6 to 9 or 12 inches long, with a terminal nodding flower. *Perianth* yellow, spotted near the base, and purplish externally; *segments* an inch to an inch and half long, the 3 outer ones recurved

from about the middle. *Stamens* about as long as the style, and scarcely half as long as the perianth. *Stigma* pubescent at summit, obscurely bifid? (entire, *Torr.* stigmas 3, *Ell.*) *Capsule* subturbinate. *Seeds* acuminate, with the point incurved.

Hab. Moist low grounds; thickets: common. *Fl.* April. *Fr.* May—June.

Obs. This handsome little plant very commonly associates with the *Panax trifolium.* Two or three other species are enumerated in the U. States.

178. LILIUM. *L. Nutt. Gen.* 324.

[Supposed from the *Celtic*, *Li*, white; the Lily being emblematic of whiteness.]

Perianth campanulate, deeply 6-parted; segments mostly recurved, with a longitudinal nectariferous groove within, from the middle to the base. *Stamens* shorter than the style. *Ovary* superior; *style* mostly as long as the perianth; *stigma* thick, triangular, entire. *Capsule* oblong, 3-celled, 3-valved, the valves connected by latticed hairs. *Seeds* numerous, flat.

Herbaceous: stems simple, leafy; leaves sessile, alternate, or verticillate; flowers terminal, subumbellate. *Nat. Ord.* 251. *Lindl.* LILIACEÆ.

1. L. PHILADELPHICUM, *L.* Leaves verticillate above, linear-lanceolate, smooth; stem 1 to 2 or 3-flowered; perianth erect, campanulate, with the segments unguiculate. *Beck, Bot. p.* 364.

PHILADELPHIAN LILIUM. *Vulgò*—Wild Lily.

Root perennial, bulbous. *Stem* 2 to 3 feet high, terete, glabrous, shining. *Leaves* 2 to 3 inches long, and about half an inch wide, smooth on both sides, in verticils of 6 or 8, the lower ones often alternate, or scattered. *Flower* mostly solitary (sometimes 2 or 3), erect, on a terminal peduncle 1 to 3 inches long. *Perianth* reddish orange-color, with fulvous or purplish spots within; *segments* about 3 inches long, lanceolate,—1 third of their length, at base, contracted into narrow claws. *Filaments* slender, smooth; *anthers* incumbent, linear, large (1 third to half an inch long). *Capsule* oblong, obtusely triangular, with the angles sulcate.

Hab. Woodlands, and borders of thickets: frequent. *Fl.* June—July. *Fr.* Sept.

2. L. CANADENSE, *L.* Leaves generally verticillate, lanceolate, distinctly nerved, nerves hairy beneath; peduncles terminal, elongated, usually by threes; perianth nodding, campanulate, with the segments lanceolate, and slightly revolute. *Beck, Bot. p.* 365.

CANADIAN LILIUM. *Vulgò*— Wild Lily.

Root perennial, bulbous. *Stem* 2 to 3 feet high, terete, smooth and shining. *Leaves* 2 to 3 inches long, and half an inch to 3 quarters wide, the margins and nerves beneath scabrous with short hairs, in verticils of 4 to 6 leaves, verticils often rather distant. *Flowers* sometimes solitary, but mostly about 3, and occasionally as many as 5, 7, and even 10, all nodding, on peduncles 3 to 6 inches long. *Perianth* yellow (sometimes reddish orange), with numerous roundish dark purple spots on the inside; *segments* 2 to 3 inches long, lanceolate, acuminate, recurved from near the middle.

Hab. Meadows, and borders of woodlands: common. *Fl.* June—July. *Fr.* Sept.

3. L. SUPERBUM, *L.* Leaves verticillate below, linear-lanceolate, acuminate, 3-nerved, smooth; flowers often in a pyramidal raceme; perianth mostly nodding, with the segments revolute. *Beck, Bot. p.* 365.

SUPERB LILIUM. *Vulgò*—Turk's Cap.

Root perennial, a large scaly bulb. *Stem* 3 to 5 (in favorable situations, sometimes 7 or 8) feet high, terete, smooth. *Leaves* 2 to 4 inches long, and 1 third to 3 fourths of an inch wide, distinctly 3-nerved, with a slender acumination, and narrowed at base, the margins and nerves smooth; verticils of 6 or 8 leaves; the upper leaves more or less scattered, generally short and often lance-ovate. *Flowers* 2 or 3 to 10 or 20, or more, when numerous arranged pyramidally on peduncles 3 to 6 inches, or more, in length. *Perianth* bright reddish orange, with numerous roundish dark purple spots on the inside; *segments* about 3 inches long, tapering pretty regularly to the apex, mostly revolute, or reflexed. *Style* nearly 1 third shorter than the perianth; *stigma* obscurely lobed.

Hab. Moist grounds; Brandywine: rare. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. I have not, myself, met with this splendid species, in Chester County: but Mr. SAMUEL PEIRCE, a careful observer, and excellent practical Botanist, informs me he has seen it along the Brandywine, near the south side of the County. It occurs frequently in the moist clay grounds, about 12 miles south of West Chester, on the road to Wilmington, Del. Dr. *Beck* seems to think it a "mere luxuriant variety" of the L. *canadense*; but, notwithstanding their general resemblance, the distinguishing characters appear to be constant, even in the humblest specimens. One or two additional species are enumerated in the U. States.

179. HEMEROCALLIS. *L.* *Nutt. Gen.* 320.

[Greek, *Hemera*, a day, and *Kallos*, beauty; its flower lasting but a day.]

Perianth tubular, 6-parted; tube cylindric; limb campanulate, marcescent. *Stamens* declined. *Ovary* superior, embraced in the tube of the perianth. *Capsule* trigonous, 3-celled, 3-valved. *Seeds* numerous, roundish.

Herbaceous: leaves radical, linear, channelled; scape corymbose. *Nat. Ord.* 251. *Lindl.* LILIACEÆ. (ASPHODELEÆ. *Beck.*).

1. H. FULVA, *L.* Leaves linear, keeled; inner segments of the perianth obtuse, undulate. *Beck, Bot. p.* 363.

TAWNY HEMEROCALLIS. *Vulgò*—Day Lily.

Gallicè—Hemerocale. *Germanicè*—Tagblume. *Hisp.*—Lirio-asfodelo.

Root perennial, fasciculate. *Leaves* about 2 feet long, and an inch wide, acute, smooth. *Scape* 3 to 4 feet high, somewhat leafy, corymbosely branched at summit; branches bracteate at base. *Perianth* tawney, or reddish yellow, about 4 inches long; tube contracted, about an inch long; limb 6-parted, spreading, inner segments curled, or wavy on the margin.

Hab. Wet meadows; about houses: frequent. *Fl.* July. *Fr.* Sept.

Obs. This foreigner is frequent in gardens; whence it has strayed, and is becoming gradually naturalized, in several neighborhoods. The H. *flava*, with yellow flowers, and flat acute perianth-segments, is occasionally found in gardens, also. There are no native species in the U. States.

b. *Perianth Calyx-like.* ¶. *Flowers on a Spadix.*

180. ORONTIUM. *L.* *Nutt. Gen.* 333.

[An ancient name; supposed to be derived from the river *Orontes*.]

Spadix terete, covered with flowers. *Perianth* of 4 to 6 truncate dilated cucullate sepals. *Stamens* 4 to 6. *Ovary* superior; *stigma* sessile, subumbilicate. *Utricle* 1-seeded.

Herbaceous: leaves radical, entire, petiolate; spadix terminal, on a terete scape, with a sheathing radical spathe. *Nat. Ord.* 256. *Lindl.* AROIDEÆ.

1. O. AQUATICUM, *L.* Leaves lance-oval, or obliquely ovate-lanceolate; scape terete, clavate. *Beck, Bot. p.* 381. ICON, *Bart. Am.* 2. *tab.* 37.

AQUATIC ORONTIUM. *Vulgò*—Golden Club. Never wet. Floating Arum.

Root perennial. *Leaves* enlarging, finally 8 to 10 or 12 inches long, and 3 to 5 inches wide, a little succulent, very smooth, of a deep green and velvety appearance on the upper surface, paler and somewhat glaucous beneath, the lamina abruptly coalescing with the summit of the petiole; *petiole* 2 or 3 to 5 inches long. *Spadix* 1 to 2 inches long, terete, a little tapering, terminating a terete clavate *scape* 6 to 12 or 18 inches in length; the spadix and upper part of the scape yellow. *Flowers* sessile, crowded. *Perianth* yellow, with 6 sepals in the lower flowers, and 4 sepals in those at the apex of the spadix,—the number of stamens corresponding. *Utricle* naked, subglobose, 1 third of an inch in diameter, smooth, deep green.

Hab. Pools, along the Brandywine: not unfrequent. *Fl.* April—May. *Fr.* August.

Obs. The only species in the U. States.

181. ACORUS. *L. Nutt. Gen.* 334.

[Gr. *a*, privative, and *Kore*, the pupil of the eye; a supposed remedy for sore eyes.]

Spadix terete, covered with flowers. *Perianth* deeply 6-parted, or rather of 6 glumaceous oblong subcucullate sepals, thickened at apex. *Ovary* superior; *stigma* sessile, minute. *Capsule* 3-celled, angular, indehiscent, many-seeded.

Herbaceous: leaves radical, ensiform; spadix lateral, on a leaf-like scape, without a spathe. *Nat. Ord.* 256. *Lindl.* AROIDEÆ.

1. A. CALAMUS, *L.* Scape ancipital, with a long ensiform point rising much above the spadix. *Beck, Bot. p.* 381.

Vulgò—Calamus. Sweet Flag.

Gallicè—Acore odorant. *Germ.*—Der Kalamus. *Hisp.*—Acoro Cálamo.

Root perennial. *Rhizoma* (or subterraneous stem) thick, horizontal, creeping, throwing out the fibrous roots in verticils. *Leaves* 2 to 3 feet long, and half an inch to near an inch wide, smooth. *Scape* as long as the leaves, and much resembling them, somewhat triangular below the spadix. *Spadix* sessile on the side of the scape, 2 to 3 inches long, and about half an inch in diameter, terete, tapering to an obtuse point, tessellated with rather small flowers. *Sepals* greenish, cuneate-oblong, keeled, scarious, incurved and thickened at apex. *Capsule* subtrigonous-oblong, obtuse, or with a short abrupt point.

Hab. Swampy meadows; about spring-heads: frequent. *Fl.* May-June. *Fr.* Sept.

Obs. The whole plant is warmly aromatic,—especially the creeping subterraneous stem, or *rhizoma*; and is deservedly popular, as a remedy for flatulent colic, &c. It has been found a valuable auxiliary to the Cinchona, in the treatment of Intermittents. Our American Botanists speak of it as being undoubtedly indigenous; but I have never seen it where it did not appear like an introduced plant. It is the only species in the U. States.

¶ ¶ *Flowers more or less panicled.*

182. JUNCUS. *L. Nutt. Gen.* 335.

[Latin, *jungo*, to join; from its being used to tie or bind objects together.]

Perianth deeply 6-parted, or rather of 6 glumaceous persistent sepals, bibracteate at base. *Stamens* 3 or 6. *Ovary* superior; *stigmas* 3, subsessile. *Capsule* mostly 3-celled, 3-valved; valves with the dissepiments in the middle. *Seeds* numerous, attached to the inner edge of the dissepiments.

Herbaceous: stem culm-like, naked, or leafy, often nodose; leaves subterete and nodose, or channelled, flat and grass-like; flowers corymbose-paniculate. *Nat. Ord.* 244. *Lindl.* JUNCEÆ.

† *Culms naked; the sterile ones resembling terete leaves. Panicle lateral.*

1. J. EFFUSUS, *L.* Culm terete, striate, soft; panicle decompound, loose, spreading; sepals lanceolate, acuminate, longer than the obtuse capsule. *Beck, Bot. p.* 371.

EFFUSED JUNCUS. *Vulgò*—Common Rush. Soft Rush.

Gallicè—Jonc à mêche. *Germanicè*—Die Binse. *Hispanicè*—Junco.

Root perennial, cespitose. *Culm* 2 to 3 feet high, erect, simple, soft and pliable, smooth, filled with a spongy pith, sheathed at base, and terminating at summit in a long tapering pointed extremity. *Panicle* bursting from a fissure in the side of the culm above the middle, sessile, much branched, often proliferous, bracteate at base, and at the subdivisions; *bracts* lance-oblong, acuminate, scarious. *Sepals* greenish with whitish scarious margins, very acute, or cuspidate, keeled, mostly 3-ribbed, with 2 ovate acuminate *bracts* at base. *Stamens* 3, opposite the outer sepals, shorter than the perianth; *anthers* white. *Style* very short; *stigmas* 3, filiform, spreading. *Capsule* trigonous-obovoid, obtuse. *Seeds* minute, oblong, acute at each end, yellowish.

Hab. Moist low grounds: common. *Fl.* June. *Fr.* August.

Obs. This species, if neglected, is apt to prevail to a troublesome extent in our wet meadows, and low grounds,—forming numerous bunches, or *Tussocks*. The whole genus is altogether worthless, to the agriculturist.

†† *Culms leafy.* * *Leaves subterete, nodose-articulate. Panicle terminal.*

2. J. ACUMINATUS, *Mx.* Culm leafy, terete; leaves terete, fistular, with knot-like joints; panicle compound, subcorymbose; flowers in capitate clusters; heads 3 to 6 or 9-flowered, pedunculate, or sessile; perianth rather shorter than the triquetrous acute capsule; sepals linear-lanceolate, cuspidate. *Beck, Bot. p.* 372.

J. sylvaticus. *Willd? Sp.* 2. *p.* 211. *Muhl. Catal. p.* 36. *Ejusd. Gram. p.* 206. Also? *Pers. Syn.* 1. *p.* 384. *Pursh, Am.* 1. *p.* 237. *Nutt. Gen.* 1. *p.* 227. *Florul. Cestr. p.* 43.

ACUMINATE JUNCUS.

Root perennial, fibrous, cespitose. *Culm* 1 to 2 feet high, fistular, jointed (nec articulato, *Muhl.*), smooth, pliable. *Leaves* 2 to 6 or 8 inches long, terete, tapering to a point, smooth, fistular, indistinctly nodose-articulate (or the fistular cavity interrupted by numerous diaphragmatic partitions), slightly contracted at those

seeming articulations; *sheaths* of the leaves striate, rather loose and open. *Panicle* rather erect, more or less corymbose, generally with one principal branch overtopping the rest; branches with lanceolate acuminate *bracts* at base. *Heads* usually 3 to 6 flowered, pedunculate, or sessile, one subsessile in the forks of the branches, with ovate acuminate *bracts* at base. *Perianth* pale green, or sometimes purplish, often as long as the capsule, with ovate subaristate scarious *bracts* at base; *sepals* tapering to a very sharp slender awnlike point. *Stamens* 3, opposite the outer sepals. *Capsule* triquetrous-oblong, with a short acumination, reddish brown, striate, shining. *Seeds* minute, oblong, acuminate at each end, striate, tawny yellow.

Hab. Meadows, and moist low grounds: frequent. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. The heads of flowers, in this species, are subject to a kind of monstrosity (arising perhaps from the puncture of insects), which gives them the appearance of being *viviparous*.

3. J. POLYCEPHALUS, *Mx.* Culm few-leaved, terete, subcompressed below; leaves subterete, or compressed, fistular, nodose-articulate; panicle compound; flowers in globose heads; heads many-flowered, pedunculate, or sessile; perianth rather shorter than the triquetrous acute capsule; sepals lanceolate, cuspidate. *Beck, Bot. p.* 373.

J. nodosus, *var.* polycephalos. *Pers. Syn.* 1. *p.* 384.

J. echinatus. *Muhl. Cat. p.* 36. *Ej. Gram. p.* 207. *Bart. Phil.* 1. *p.* 170.

MANY-HEADED JUNCUS. *Vulgò*—Button Rush.

Root perennial, somewhat tuberous, and fibrous, creeping. *Culm* 1 to 2 feet high, fistular, jointed, about 2-leaved. *Leaves* 3 to 6 inches long, often compressed and ensiform, thickish, with knot-like joints; *sheaths* rather open, with a scarious margin which is produced at summit. *Panicle* with 1 or 2 elongated branches. *Heads* 3 to 12 or 15, usually from 5 to 9, globose, about 1 third of an inch in diameter, pedunculate, or sessile, densely flowered, with lanceolate acuminate *bracts* at base. *Perianth* pale green, with scarious lance-ovate acuminate *bracts* at base, which are often trifid at apex, or toothed on each side the awn-like point; *sepals* lanceolate, tapering to a very acute point, the outer ones keeled, or concave. *Stamens* 3, or sometimes 6, nearly as long as the sepals. *Capsule* oblong, triquetrous, acute at apex, or with a short acumination. *Seeds* minute, oblong, striate, tawny yellow, with a scarious *cauda*, or arillus-like acumination, at each end.

Hab. Low, swampy grounds: frequent. *Fl.* July. *Fr.* September.

Obs. This species, so remarkable for its globular bur-like heads, was unaccountably overlooked, when my Catalogue was published. *Michaux* describes 2 *varieties*,—which Mr. *Elliott* says are distinct species, and has described them accordingly, under the names of J. *polycephalus*, and J. *echinatus*.

4. J. SUBVERTICILLATUS, *Willd?* Culm few-leaved, compressed; leaves compressed, fistular, nodose-articulate; panicle subcorymbose, elongated; flowers in dense capitate fascicles; heads many-flowered, pedunculate, or sessile; perianth shorter than the triquetrous acuminate capsule; sepals linear-lanceolate, keeled, striate, cuspidate. *Beck, Bot. p.* 373.

J. fluitans? *Mx. Am.* 1. *p.* 191.

J. verticillatus? *Pers. Syn.* 1. *p.* 384. *Pursh, Am.* 1. *p.* 237. *Nutt. Gen.* 1. *p.* 227.

SUBVERTICILLATE JUNCUS.

Root perennial. *Culm* erect (decumbent, *Willd.*), 18 inches to 2 feet high, slender, fistular, jointed, about 2-leaved. *Leaves* 3 to 6 inches long, slender, compressed, with knot-like joints; *sheaths* rather short and open, with a slightly scarious margin at summit. *Panicle* 4 to 6 or 8 inches long; branches subverticillate, diverging, very unequal in length. *Heads* of flowers somewhat hemispherical, fasciculate-verticillate, sessile, or terminating the peduncles, (usually a sessile head in the axil of the branches), with lance-ovate acuminate *bracts* at base. *Perianth* about 1-fourth shorter than the capsule, with scarious ovate mucronate *bracts* at base; *sepals* striate, or 3-nerved, green on the back, with white scarious margins. *Capsule* triquetrous-oblong, acuminately tapering to a sharp point. *Seeds* minute, oblong, acute at each end, tawny yellow.

Hab. Swamps, on the Mica-slate range; G. Meredith's: frequent. *Fl.* July: *Fr.* Sept.

Obs. This species was first collected here, in 1828, by D. TOWNSEND, Esq. and was supposed to be a variety of J. *polycephalus*; but it proves, on examination and comparison, to be the J. *subverticillatus*, of *Muhlenberg*. It seems to differ somewhat from *Willdenow's* description; and can hardly be reconciled with *Michaux's* J. *fluitans*,—which has been cited as a synonym.

* * *Leaves channelled above, or flat and grass-like.*

5. J. TENUIS, *Willd.* Culm slender, nearly naked, leafy at base; leaves narrow, setaceous-linear, channelled; panicle unequal, subdichotomous, mostly shorter than the erect 2-leaved involucre, flowers solitary, racemose, subsessile; perianth longer than the obtuse capsules. *Beck, Bot. p.* 372.

J. bicornis. *Mx. Am.* 1. *p.* 191. Also, *Pursh, Am.* 1. *p.* 236. *Nutt. Gen.* 1. *p.* 227.

Also, J. dichotomus. *Ell. Sk.* 1. *p.* 406. (*fide Schweinitz*). *Florul. Cestr. p.* 43.

SLENDER JUNCUS.

Root perennial, cespitose. *Culm* 6 to 12 inches, and sometimes near 2 feet, high, often very slender, subterete, striate, smooth, generally naked, except near the root, and at the base of the panicle. *Leaves* subradical, 3 to 6 or nine inches long, very narrow, keeled, striate, channelled on the upper side, smooth. *Panicle* subcorymbose, mostly with 2 principal branches, and several shorter ones between, with a foliaceous *involucre* at base, of which the 2 principal leaves are erect, and generally longer than the panicle; branches of the panicle *bracteate* at base. *Flowers* solitary, 1 or 2 subsessile in the forks of the branches, and 2 or 3 unilateral on the branches. *Perianth* greenish; *sepals* lanceolate, acuminate, about 1 fourth longer than the capsule, with 2 ovate rather acute *bracts* at base. *Stigmas* 3, linear, spreading, on a short but distinct style. *Capsule* subglobose, somewhat trigonous. *Seeds* oblong, a little gibbous, striate, brown.

Hab. Low moist grounds; and also on dry hills: common. *Fl.* June. *Fr.* July, Aug.

Obs. This species varies considerably in size and appearance. The *involucre* is often 3 or 4-leaved; and in many instances only 1 of the leaves is longer than the panicle; sometimes all are shorter. The J. *dichotomus*, of my Catalogue, I am now satisfied is only a variety of this.

6. J. BUFONIUS, *L.* Culm somewhat leafy, dichotomous-paniculate at summit; leaves linear-setaceous, channelled; flowers subsolitary, unilateral, nearly sessile; perianth much longer than the elliptic-ovoid capsule; sepals conspicuously acuminate. *Beck, Bot. p.* 372.

TOAD JUNCUS.

Root annual, fibrous, cespitose. *Culm* 2 to 6 or 8 inches high, subterete, striate, smooth, dichotomously paniculate above. *Leaves* subradical, shorter than the culm, dilated membranaceous and sheathing at base. *Panicle* large, few-flowered, usually with a solitary subsessile flower in the forks of the branches; branches with lanceolate scarious *bracts* at base. *Involucre* foliaceous, sheathing at base, one of the leaves mostly overtopping the panicle. *Perianth* pale green; *sepals* nearly twice as long as the capsule, linear-lanceolate, much acuminate, with broad white scarious margins; *bracts* large, ovate, thin and white. *Capsule* ovoid-oblong, minutely striate-punctate, yellowish, shining. *Seeds* ovoid, obtuse, yellowish-brown.

Hab. Wet, low grounds; around ponds: frequent. *Fl.* July. *Fr.* Aug.—Sept.

7. J. MARGINATUS, *Rostk.* Culm leafy, nodose, compressed; leaves flat, smooth, grass-like; panicle subcorymbose, compound, proliferous; flowers in capitate clusters; perianth about as long as the obtuse capsule; outer sepals and bracts subaristate, inner sepals obtuse, margined. *Beck, Bot. p.* 372.

J. aristulatus. *Mx. Am.* 1. *p.* 192.

J. aristatus. *Pers. Syn.* 1. *p.* 385. *Ell. Sk.* 1. *p.* 408. Also, *Pursh, Am.* 1. *p.* 237. *Nutt. Gen.* 1. *p.* 227.

Also, J. bulbosus. *Florul. Cestr. p.* 43. Not of *Linn.*

MARGINED JUNCUS.

Root perennial, tuberous, and creeping. *Culm* 1 to 2 and 3 feet high, simple, compressed, pithy, smooth. *Leaves* 4 to 12 or 15 inches long, flat, linear, acute, grass-like, sheathing at base, the radical ones mostly shorter than those on the culm. *Panicle* somewhat corymbose, often proliferous and elongated (2 to 5 inches in length), mostly longer than the erect foliaceous *involucre* at base. *Flowers* in fascicles, or heads; *heads* 3 to 5 or 6-flowered, pedunculate, or subsessile in the forks of the branches; branches with subulate long-pointed *bracts* at base. *Perianth* with the *sepals* unequal, green on the back, edged with dark purple; the 3 outer ones, and the bracts at their base, subaristate; the 3 inner ones obtuse, with scarious margins. *Stamens* 3, inserted at the base of the exterior sepals. *Stigmas* filiform, subsessile. *Capsule* obtusely trigonous-obovoid, often dark purple. *Seeds* minute, yellowish, acute at each end, striate.

Hab. Moist low grounds; borders of woodlands: frequent. *Fl.* July. *Fr.* Sept.

Obs. We have a large *variety* of this,—often 3 feet high, with an elongated panicle, and long leaves on the culm,—which is probably the *var. odoratus*, of *Torrey;*—though I have not had occasion to notice the vanilla-like odor of which he speaks. The *J. bulbosus*, of my Catalogue, proves also to be a variety of this species. It is a starved specimen, collected on the Mica-slate hills; and was erroneously inserted by that name, on the authority of a distinguished botanical friend. It is quite possible that other species, of this difficult and not very attractive genus, may occur in Chester County; but the foregoing are all that I have ascertained satisfactorily. Nine or ten additional species are enumerated in the U. States.

183. LUZULA. *DC.*

[Italian, *Lucciola*, a glow-worm; from its glittering spikelets, when wet with dew.]

Perianth deeply 6-parted, or rather of 6 glumaceous persistent sepals, bibracteate at base. *Ovary* superior; *stigmas* 3. *Capsule* 1-celled, 3-valved; valves without dissepiments. *Seeds* 3, at the bottom of the cell.

Herbaceous: stems culm-like nodose, leafy; leaves flat, soft and grass-like, generally pilose; flowers in terminal subpaniculate clusters, or spikelets. *Nat. Ord.* 244. *Lindl.* JUNCEÆ.

1. L. CAMPESTRIS, *DC.* Leaves linear-lanceolate, pilose; spikelets mostly pedunculate, the central one subsessile; sepals acuminate, rather longer than the obtuse capsule. *Beck, Bot. p.* 373.

Juncus campestris. *Willd. Sp.* 2. *p.* 221. *Mx. Am.* 1. *p.* 190. *Pers. Syn.* 1. *p.* 386. *Ait. Kew.* 2. *p.* 311. *Muhl. Catal. p.* 36. *Ejusd. Gram. p.* 199. *Pursh, Am.* 1. *p.* 238. *Nutt. Gen.* 1. *p.* 227. *Bart. Phil.* 1. *p.* 170. *Ell. Sk.* 1. *p.* 410. *Bigel. Bost. p.* 140. *Florul. Cestr. p.* 43.

FIELD LUZULA. *Vulgò*—Field Rush.

Root perennial, fibrous, sometimes creeping and tuberous. *Culm* 4 to 12 or 20 inches high, often cespitose, slender, subterete, solid with pith, striate, smooth. *Leaves* 2 to 6 inches long, linear-lanceolate, acute, somewhat thickened and cartilaginous at the point, the margin ciliate with long loose hairs, sheathing at base, with the long hairs in something of a tuft at the throat. *Panicle* subumbellate, or cymose; *peduncles* 4 to 6 or 8, unequal, half an inch to 2 or 3 inches long, erect, or spreading, some of them at length reflexed; *involucre* of 2 or 3 unequal leaves, usually shorter than the longest peduncles. *Spikelets* roundish, or oblong-ovoid, many-flowered. *Sepals* generally fuscous, or chesnut brown, scarious on the margin, with whitish scarious *bracts* at base. *Stigmas* exserted, filiform, about as long as the style. *Capsule* trigonous-obovoid; valves with a central internal ridge, but no dissepiments. *Seeds* ovoid, obtuse, dark brown, scabrous-punctate.

Hab. Fields, and open woodlands: common. *Fl.* April. *Fr.* June.

Obs. Three other species are enumerated in the U. States.

[Sabbatia angularis. *Pentandria Monogynia.*]

[Laurus Sassafras. *Enneandria Monogynia.*]

Order 2. Digynia.

[Polygonum Persicaria. P. orientale. P. arifolium. *Octandria Trigynia.*]

Order 3. Trigynia.

184. MELANTHIUM. *L. Nutt. Gen.* 343.

[Gr. *Melas*, black, and *Anthos*, a flower; the flowers becoming of a dark color.]

MONOICOUSLY POLYGAMOUS: *Perianth* corolla-like, deeply 6-parted, rotate, persistent; segments suborbicular, with 2 glands at base, unguiculate. *Stamens* inserted on the claws of the perianth-segments. *Ovary* superior (often abortive); *styles* persistent. *Capsule* trigonous-ovoid, 3-celled (or 3 connate capsules); apex 3-horned, partly trifid. *Seeds* numerous, compressed. membranaceously margined.

Herbaceous: leaves alternate, somewhat gramineous, with parallel nerves; flowers in a terminal racemose panicle. *Nat. Ord.* 245. *Lindl.* MELANTHACEÆ.

1. M. VIRGINICUM, *L.* Leaves linear-lanceolate; panicle pyramidal, with simple racemose branches; segments of the perianth at first orbicular, finally ovate-oblong, subhastate, or auriculate. *Beck, Bot. p.* 366.

Veratrum virginicum. *Ait. Kew.* 5. *p.* 426. *Lindl. Ency. p.* 860.

Virginian Melanthium.

Root perennial. *Stem* scape-like, 3 to 4 feet high, erect, terete, minutely pubescent, leafy. *Leaves* 9 to 12 or 15 inches long, and half an inch to an inch and half wide, acute, nerved, slightly keeled, smooth, narrowed almost to a petiole towards the base, partially embracing the stem, the lower ones sheathing. *Panicle* 12 to 15 inches long; branches 2 to 6 inches long, simple, alternate, rather erect, roughish-pubescent, with lanceolate *bracts* at base; *flowers* racemose on the branches; *pedicels* 1 third to 3 fourths of an inch long, with ovate rather obtuse pubescent *bracts* at base. *Perianth* pale greenish yellow, finally becoming brown; *segments* pubescent externally, rotately spreading, at first somewhat spatulate, or the limb orbicular-ovate, repand-denticulate, with 2 oval glandular spots at base, abruptly contracted to a narrow claw below,—at length the limb becomes ovate-oblong, and auriculate, or somewhat hastate, at base. *Stamens* shorter than the perianth, inserted into the narrow claws of the segments, and apparently adnate to them at base. *Ovary* mostly abortive in the lower flowers, in the upper flowers generally perfect; *styles* triquetrous-subulate, diverging; *stigmas* simple, recurved. *Capsule* about half an inch long, and 1 third of an inch in diameter, oblong-ovoid, triangular (apparently consisting of 3 connate *carpels*) a little 3-cleft at apex, 3-horned by the persistent styles, smooth. *Seeds* compressed, lance-oval, with a winged margin.

Hab. Wet meadows; margins of swamps: frequent. *Fl.* July. *Fr.* Aug.—Sept.

Obs. Three other species are enumerated in the United States.

185. VERATRUM. *L. Nutt. Gen.* 345.

[From the Latin, *verè atrum*, truly black; in allusion to the color of the root.]

Monoicously polygamous: *Perianth* calyx-like, deeply 6-parted, spreading, persistent; segments lanceolate, without glands, sessile. *Stamens* inserted on the receptacle. *Ovaries* 3, connate, superior (often abortive). *Capsules* 3, connate. *Seeds* numerous, compressed, enclosed in a membranous coat.

Herbaceous: leaves alternate, more or less elliptic, and plicate, many nerved; flowers in a terminal racemose panicle. *Nat. Ord.* 245. *Lindl.* Melanthaceæ.

1. V. viride, *Ait.* Leaves broad-oval, acuminate, plicate; panicle pyramidal, with compound racemose branches; bracts of the branches oblong-lanceolate; partial bracts longer than the pedicels. *Beck, Bot. p.* 368.

V. album. *Mx. Am.* 2. *p.* 249. *Pers. Syn.* 1. p. 397.

Green Veratrum. *Vulgò*—Hellebore. White Hellebore. Indian Poke.

Root perennial, thick and fleshy, with numerous fibres. *Stem* 2 to 4 feet high, leafy, terete, pubescent. *Leaves* 5 to 10 inches long, and 3 to 5 inches wide, nearly elliptical, with a short acumination, almost acute at base, sessile, sheathing the stem, plicate, smoothish above, pubescent beneath,—the upper leaves, and principal bracts, narrower and lanceolate, tapering to a slender acute point. *Panicle* 8 to 12 inches long; branches compound, pubescent, with foliaceous *bracts* at base; *pedicels* about 1 fourth of an inch long. *Perianth* yellowish green; segments lance-oblong, nerved, with minute rugged serratures on the margin, tapering at base, and thickened on the edge. *Stamens* recurved, shorter than the perianth. *Ovaries* 3, oblong, cohering (in many of the flowers abortive); *styles* recurved, persistent. *Capsules* 3, united, about an inch long, tapering at each end, separa-

ting at summit, and opening on the inner side. *Seeds* imbricated, linear-oblong, coated and margined by a whitish cellular membrane, which is compressed, lance-ovate, and obliquely acuminate.

Hab. Low swampy grounds; borders of thickets: frequent. *Fl.* May. *Fr.* July.

Obs. The *nerves*, in the broad elliptic leaves, have some resemblance to the meridian lines in a map of the globe. The *root* of this plant is said to possess active properties; and to produce violent effects, if taken internally. It has been frequently asserted, in the public prints, that it will effectually destroy Cockroaches; but my experience does not confirm the statement. The infusion is sometimes used, in popular practice, as a lotion, for cutaneous diseases. Two additional species are enumerated in the U. States.

186. HELONIAS. *L. Nutt. Gen.* 346.

[Supposed from the Greek, *Helos*, a marsh; the place of growth of some species.]

Flowers sometimes dioicous; *perianth* corolla-like, deeply 6-parted, persistent; segments without glands, sessile. *Ovary* superior; *styles* distinct, persistent. *Capsule* 3-horned, 3-celled; cells mostly few-seeded.

Herbaceous: leaves chiefly radical, sublinear, often gramineous, and sheathing at base; flowers in a terminal simple raceme. *Nat. Ord.* 245. *Lindl.* Melanthaceæ.

1. H? dioica, *Pursh.* Scape leafy; leaves lanceolate, the radical ones obovate-lanceolate; raceme dioicous, somewhat spiked, the summit nodding at first; pedicels short, without bracts; segments of the perianth linear. *Beck, Bot. p.* 367.

H. lutea. *Ait. Kew.* 2. *p.* 330. *Lindl. Ency. p.* 292.

Veratrum luteum. *Willd. Sp.* 4. *p.* 897. *Pers. Syn.* 1. *p.* 397. *Muhl. Catal. p.* 94. *Nutt. Gen.* 1. *p.* 234.

Dioicous Helonias. *Vulgò*—Blazing Star. Devil's bit.

Plant yellowish green, glabrous. *Root* perennial, thick, truncate or præmorse. *Scape* 1 to 2 feet (the pistillate ones about 3 feet) high, sulcate-striate. *Radical leaves* 3 to 6 or 8 inches long, and half an inch to an inch wide, oblanceolate, often somewhat spatulate, rather obtuse, attenuated nearly to a petiole at base; those on the scape gradually smaller as they ascend, linear-lanceolate, acute. *Flowers* dioicous, in a simple spike-like raceme 6 to 12 inches in length. *Staminate raceme* slender, flaccid, mostly nodding or recurved, ochroleucous. *Perianth* shorter than the stamens; *segments* very narrow, linear, obtuse; *pedicels* 1 fourth to half an inch long, colored. *Ovary* mostly wanting. *Pistillate raceme* spiked, stouter, and mostly erect. *Perianth* about as long as the ovary, greenish white; *segments* linear, obtuse. *Stamens* short, abortive. *Ovary* trigonous-ovoid, greenish; *stigmas* subsessile, clavate, fleshy, spreading, or recurved. *Capsule* about half an inch long, obovoid-oblong, tapering at base, 3-furrowed at apex, opening at summit, erect, or appressed to the rachis, on short angular clavate pedicels. *Seeds* numerous, oblong, slightly coated and irregularly margined by a white compressed cellular membrane.

Hab. Woodlands, and meadows: frequent. *Fl.* May—June. *Fr.* Sept.

Obs. I have occasionally observed *perfect* flowers on the staminate racemes; and sometimes 4 stigmas on the ovary,—in which cases the capsule was 4-celled, and 4-furrowed at apex. This plant seems to be intermediate between *Veratrum* and *Helonias;* and, as Dr. *Torrey* remarks, "should perhaps be the type of a new genus." The *root* is considerably bitter,—affording a tonic of some value.

2. H. ERYTHROSPERMA, *Mx.* Scape leafy; leaves linear, slightly channelled above, very long; raceme oblong; bracts short; capsule shortened, 3-lobed; lobes with divaricate horns; seeds ovoid, with a purple fleshy coat. *Beck, Bot. p.* 367.
H. læta. *Ait. Kew.* 2. *p.* 330. *Lindl. Ency. p.* 292.
H. angustifolia. *Florul. Cestr. p.* 44. Not of *Michaux, and others.*
Melanthium lætum. *Willd. Sp.* 2. *p.* 267. *Muhl. Catal. p.* 37.

RED-SEEDED HELONIAS.

Root perennial [bulbous, *Ell. Torr.*]. *Scape* 18 inches to 2 feet high, obtusely angular, smooth. *Radical leaves* 12 to 15 or 18 inches long, and 1 third to 3 fourths of an inch wide, nearly linear, acute, or sometimes obtuse, smooth; those on the scape shorter, acute, and more grass-like. *Raceme* 2 or 3 to 6 and sometimes 9 inches long; *pedicels* half an inch to an inch long, each with a lance-ovate acute *bract* at base (bracts obtuse, *Torr.*). *Perianth* greenish white; segments oblong, obtuse, sessile. *Stamens* rather longer than the perianth; *anthers* white. *Ovary* 3-lobed; lobes abruptly acuminate. *Capsule* reddish brown, 3-lobed (or rather 3 connate capsules), turgid; lobes abruptly acuminate, or horned by the persistent styles; horns diverging, or divaricate. *Seeds* few, rather large, ovoid, enclosed in a pulpy coat, which is purple at maturity.

Hab. Swamps, in the Mica-slate; J. D. Steele's: rare. *Fl.* June. *Fr.* Aug.

Obs. This plant is said to be a narcotic poison; and Mr. *Elliott* informs us that the root is used, at the South, for destroying flies. The H. *angustifolia*, of my Catalogue, proves to be nothing more than a starved specimen of this. There are four additional species enumerated in the U. States.

187. GYROMIA. *Nutt. Gen.* 351.

[Greek, *Gyros*, a circle; in reference to its verticillate leaves.]

Perianth corolla-like, deeply 6-parted, revolute. *Ovary* superior; *stigmas* sessile, long, linear, recurved, united at base. *Berry* 3-celled; cells 3 to 6 seeded. *Seeds* compressed, 3-sided.

Herbaceous: root tuberous; stem simple; leaves entire, verticillate; flowers terminal, aggregated. *Nat. Ord.* 249. *Lindl.* SMILACEÆ.

1. G. VIRGINICA, *Nutt.* Leaves lance-oval, acuminate, sessile, in a verticil of 5 to 9 near the middle of the stem, at summit mostly in threes; peduncles aggregated, at the terminal verticil. *Torr. Fl.* 1. *p.* 374.
Medeola virginica. *Willd. Sp.* 2. *p.* 270. *Mx. Am.* 1. *p.* 214. *Pers. Syn.* 1. *p.* 398. *Ait. Kew.* 2. *p.* 327. *Muhl. Catal. p.* 37. *Pursh, Am.* 1. *p.* 244. *Ell. Sk.* 1. *p.* 425. *Bigel. Bost. p.* 141. *Lindl. Ency. p.* 290. *Beck, Bot. p.* 360.

VIRGINIAN GYROMIA. *Vulgò*—Indian Cucumber. Cucumber root.

Plant pale green. *Root* perennial, a white oblong horizontal tuber, 1 to 2 inches long. *Stem* 1 to 2 feet high, slender, smooth, clothed with a whitish or light brown deciduous flocculent wool, and with 1 or 2 scarious sheathing *stipules* at and near the base. *Leaves* in 2 whorls; the lower one above the middle of the stem, with occasionally a straggling leaf an inch or two below the whorl, the leaves 3 or 4 inches long, and about an inch wide, acute at each end; the upper whorl terminal, mostly of 3 (sometimes of 4 or 5) leaves, the leaves 1 to 2 inches long, broad oval, acuminate, often stained at base with dark purple when the plant is in fruit. *Peduncles* 3 to 6 (sometimes 8 or 10), half an inch to an inch long, arising from the

terminal whorl, at first recurved between the leaves, with the flowers nodding, erect and purplish when in fruit. *Perianth* pale greenish yellow; *segments* lance-oblong, obtuse, nerved, revolute. *Stigmas* about half an inch long, thickish, linear, recurved, dark purple. *Berry* globose, 3-celled, dark purple when mature. *Seeds* suborbicular, compressed, somewhat 3-sided,—usually but 1 perfected in each cell, the others abortive.

Hab. Shaded, moist grounds; about spring heads: frequent. *Fl.* May, June. *Fr.* Sept.

Obs. The delicate white tuber has been thought to resemble the cucumber, in taste; and is alleged to be diuretic in its properties. It is the only species of the genus,—having been separated, by Mr. *Nuttall*, from the *Medeolas* of Africa.

188. TRILLIUM. *L. Nutt. Gen.* 352.

[Latin, *Trilix*, triple; several parts of its structure being in *threes*.]

Perianth deeply 6-parted, spreading; the 3 outer segments sepaloid, the 3 inner ones petaloid. *Ovary* superior; *stigmas* sessile, spreading, distinct, or approximate. *Berry* 3-celled; cells many-seeded.

Herbaceous: leaves in threes, verticillate at the summit of the stem, entire; flowers solitary, terminal. *Nat. Ord.* 249. *Lindl.* SMILACEÆ.

1. T. PENDULUM, *Muhl.* Leaves roundish-rhomboid, acuminate, subsessile; peduncle mostly reflexed, flower pendulous; petaloid segments ovate, acuminate, rather larger than the outer ones. *Beck, Bot. p.* 361. T. cernuum. *Bart. Phil.* 1. *p.* 175. *Bart. Am.* 2. *p.* 13. ICON, *tab.* 40. *Bigel. Bost. p.* 141. Also, *Pursh, Am.* 1. *p.* 245. *Nutt? Gen.* 1. *p.* 239. *Ell? Sk.* 1. *p.* 428. *Torr. Fl.* 1. *p.* 376. *Ejusd. Comp. p.* 161. *Beck, Bot. p.* 361. Not of *Willd. Sp. Mx. Pers. Ait. Muhl.* nor! *Eat.*

PENDULOUS TRILLIUM. *Vulgò*—Three-leaved Nightshade.

Root perennial. *Stem* 9 to 15 inches high. *Leaves* 3 to 5 inches long, and 2 to 4 inches wide, broadly rhomboid, or sometimes almost orbicular-ovate, with a short abrupt acumination, acute at base, on a very short petiole. *Peduncle* terminal, from the bosom of the 3 leaves, half an inch to an inch long, mostly recurved between the leaves, with the flower pendulous just below them. Outer segments of the *perianth* (or sepals) green, ovate-lanceolate, acuminate; inner segments (or petals) white, ovate, or ovate-oblong, acuminate. *Berry* roundish, or trigonous-ovoid, half an inch to near an inch in diameter, dark purple when mature. *Seeds* numerous, oblong-ovoid, obtuse, striate, rugose-punctate, dark purple.

Hab. Rich, moist, shaded grounds; borders of thickets: frequent. *Fl.* May. *Fr.* Aug.

Obs. There has been much perplexity among the American Botanists, concerning this species, in consequence of *Pursh* having confounded it with the true T. *cernuum*, of the South (T. *Catesbæi, Ell.* T. *stylosum, Nutt.*). *See Dr. Baldwin's note, in Florul. Cestr. p.* 44. Nine or ten additional species are enumerated in the U. States,—of which I have heard that the T. *erectum, L.* has probably been found near Kennett Square, in this County; but I have yet seen no authentic specimen.

189. RUMEX. *L. Nutt. Gen.* 353.

[Latin, *Rumex*, a pike, or spear; from the shape of the leaves of some species.]

FLOWERS sometimes DIOICOUS. *Perianth* calyx-like, persistent, deeply 6-parted, outer segments smaller. *Ovary* superior; *stigmas* many-cleft. *Seed*, or *Nut*, triquetrous, covered by the 3 inner valviform segments of the perianth.

Herbaceous: leaves alternate; flowers in subverticillate fascicles, racemose-paniculate, terminal or axillary. *Nat. Ord.* 156. *Lindl.* POLYGONEÆ.

† *Flowers perfect.* * *Valves or inner perianth-segments entire, all graniferous.*

1. R. CRISPUS, *L.* Leaves lanceolate, acute, curled on the margin; valves large, cordate, nearly entire, reticulately and prominently veined, all dorsally graniferous. *Beck, Bot. p.* 303.

CURLED RUMEX. *Vulgò*—Sour Dock. Curled Dock.

Gallicè—Patience friséc. *Germanicè*—Krauser Ampfer.

Root perennial, large, fusiform, yellow. *Stem* 2 to 3 or 4 feet high, angular-sulcate, smoothish, paniculately branched above. *Radical leaves* numerous, 8 to 12 or 15 inches long, and 1 to 2 or 3 inches wide, lance-oblong, rather acute; *stem leaves* linear-lanceolate. *Flowers* in crowded fasciculate verticils, with scarious involucres at base; *pedicels* slender, 3 to 4 lines long, articulated near the base. *Perianth* green; inner segments, or valves, much larger, cordate, obsoletely denticulate near the base, each with an ovoid acuminate excrescence, or grain, on the back. *Seed*, or *nut*, acutely triquetrous, acuminate, brown, smooth and shining.

Hab. Moist grounds; meadows, &c. common. *Fl.* May, July. *Fr.* July, Sept.

Obs. All the species of *Rumex*, in this County, are introduced; and are rather troublesome plants. The radical *leaves* of this are often collected, in the spring, and used as early "greens." The *root* is said to have been found an useful application to cancerous sores; but I know not how correctly.

** *Valves dentate, mostly graniferous.*

2. R. OBTUSIFOLIUS, *L.* Radical leaves subcordate-oblong, obtuse; valves lance-ovate, acutely dentate near the base, one of them conspicuously graniferous. *Beck, Bot. p.* 304.

OBTUSE-LEAVED RUMEX. *Vulgò*—Bitter Dock. Broad-leaved Dock.

Root perennial, thick, branching, brown externally, yellow within. *Stem* 2 to 4 feet high, angular-sulcate, roughish, paniculately branched. *Radical leaves* 8 to 12 inches long, and 4 to 6 inches wide, roughish-pubescent on the nerves; *petioles* sulcate, pubescent. *Flowers* in interrupted fasciculate verticils. *Perianth* green; inner segments lance-ovate, rather acute, reticulately veined, with long acute teeth on the margins, towards the base, and one of them bearing a large grain on the back.

Hab. Grass-lots, gardens, and meadows: frequent. *Fl.* June–July. *Fr.* Aug.-Sept.

Obs. This is even more worthless than the preceding; but not quite so prevalent.

†† *Flowers dioicous: Valves not graniferous.*

3. R. ACETOSELLA, *L.* Leaves lanceolate, hastate, with the lobes acute, spreading; flowers dioicous; valves of the pistillate flowers entire, not graniferous. *Beck, Bot. p.* 304.

Vulgò—Sheep Sorrel. Field Sorrel.

Gallicè. Petite Oseille. *Germanicè.* Der Sauerampfer. *Hisp.* Acedcrilla.

Root perennial, somewhat fusiform. *Stem* 6 to 12 or 15 inches high, slender, branching, somewhat angular and furrowed. *Leaves* 1 to 2 inches long, and 1 third to 3 fourths of an inch wide; the lower ones mostly all hastate, and on pe-

tioles as long, or longer, than the leaves,—the upper ones on short petioles, and sometimes not hastate. *Racemes* paniculate, finally becoming purple; verticils dimidiate, 6 to 8 flowered. *Staminate flowers* with the ovary abortive. *Pistillate plants* mostly taller than the staminate.

Hab. Sandy fields; about old stumps of trees: common. *Fl.* May. *Fr.* Aug.

Obs. This plant is well known for its acid taste; and is sometimes so abundant as to be a nuisance. Dressing the land with Lime is believed to be the best means of expelling it. The *pistillate* plants are much less common than the staminate. Ten or a dozen additional species have been enumerated in the U. States; but it is difficult to say how many of them are really indigenous.

[Aletris farinosa. *Hexandria Monogynia.*]

Order 4. Tetragynia.

190. SAURURUS. *L. Nutt. Gen.* 354.

[Greek, *Saura*, a lizard, and *Oura*, a tail; in allusion to its spike of flowers.]

Flowers in an *ament*, or crowded *spike*. *Scales* 1-flowered. *Corolla* 0. *Stamens* 6 to 8; *anthers* adnate to the filaments. *Ovaries* 3 or 4, connate; *styles* 3 or 4, recurved. *Capsules* 3 or 4, united, each 1- or rarely 2-seeded, not opening.

Herbaceous aquatics: leaves alternate; flowers naked, in solitary pedunculate spikes, opposite the leaves. *Nat. Ord.* 159. *Lindl.* Saurureæ.

1. S. cernuus, *L.* Leaves sagittate-cordate, acuminate; spike at first cernuous. *Beck, Bot. p.* 317.

Nodding Saururus. *Vulgò*—Lizard's Tail. Breast weed. Water lilies.

Root perennial, creeping, thick and porous. *Stem* 1 to 2 feet high, leafy, forked above, angular and sulcate, smoothish. *Leaves* 4 to 6 inches long, and 2 to 4 inches wide, smooth, glaucous beneath; *petioles* 1 to 2 inches long, somewhat amplexicaul at base. *Spike* 3 to 6 inches long, slender, white, and nodding at apex when in flower, very pubescent, on a peduncle 2 to 4 inches long, inserted opposite a leaf on one of the forks of the stem. *Flowers* naked, on short pedicels, with colored pubescent sheathing somewhat spatulate *bracts*, at base, about as long as the ovaries. *Stamens* 6, often 7 or 8, twice as long as the bracts, slender, inserted at the base of the ovaries.

Hab. Margins of pools, and streams: not common. *Fl.* June—July. *Fr.* Sept.

Obs. This plant is found along the Schuylkill,—also in the Great Valley, and at the forks of Brandywine; but it is by no means common in the County. The fresh *roots*, bruised and applied in the form of poultice, are a popular remedy for inflamed breasts. It is the only species in the United States.

Order 6. Polygynia.

191. ALISMA. *L. Nutt. Gen.* 356.

[Said to be from the Celtic, *Alis*, water; its usual place of growth.]

Perianth deeply 6-parted; the 3 outer segments sepaloid, persistent, the 3 inner ones petaloid, deciduous. *Ovaries* superior, numerous; *styles* short. *Capsules* numerous, mostly 1-seeded, not opening.

Herbaceous aquatics: leaves radical, with parallel veins; flowers in a terminal compound verticillate panicle. *Nat. Ord.* 229. *Lindl.* Alismaceæ.

1. A. Plantago, *L.* Leaves oval, subcordate, abruptly acuminate, on long petioles; fruit obtusely triangular. *Beck*, *Bot. p.* 378.
A. trivialis. *Pursh*, *Am.* 1. *p.* 252. *Ell. Sk.* 1. *p.* 434.
Plantain Alisma. *Vulgò*—Water Plantain.
Gall. Pain de Crapaud. *Ger.* Der Frosch loeffel. *Hisp.* Llanten aquatico.

Root perennial, with a large bunch of fibres. *Leaves* 4 to 6 inches long, and 2 to 4 inches wide, mostly 9-nerved, smooth, on *petioles* 6 to 9 inches long. *Scape* 1 to 2 feet high, trigonous, smooth, fistular. *Panicle* large (12 to 15 inches long), decompound, pyramidal, branches verticillate, with lance-ovate acuminate involucre-like *bracts* at the base of the verticils. *Perianth* with the outer segments (or sepals) green, ovate, nerved, persistent; the inner segments (or petals) white, often with a tinge of purple, suborbicular, larger than the outer ones, deciduous; *pedicels* slender, striate, near an inch long, mostly in terminal verticils of 3 or 4. *Fruit* subturbinate, truncate at apex, consisting of numerous *carpels* verticillately arranged.

Hab. Muddy rivulets, and miry places; frequent. *Fl.* July. *Fr.* Sept..

Obs. This plant, some years ago, was the subject of much newspaper gossip, as a specific for Hydrophobia; but it soon shared the fate of all such pretended remedies. Two or three additional species have been enumerated in the U. States,—of which the A. *parviflora*, *Pursh*, is probably only a *variety* of this.

CLASS VII. HEPTANDRIA.

Order 1. Monogynia.

192. TRIENTALIS. *L.* *Nutt. Gen.* 357.
[Latin, *Tricns*, the third part of a thing; being about one third of a foot high.]

Calyx deeply 7 or 8-parted. *Corolla* deeply 7 or 8-parted, rotate, regular. *Stamens* 7 or 8. *Ovary* superior. *Fruit* dry, capsular, opening at the sutures, 1-celled, many-seeded.

Herbaceous: stem simple; leaves terminal, verticillately aggregated; peduncles 1-flowered, from the bosom of the leaves. *Nat. Ord.* 207. *Lindl.* Primulaceæ.

1. T. americana, *Pursh.* Leaves lanceolate, acuminate, obsoletely serrulate; corolla-lobes acuminate. *Beck*, *Bot. p.* 289. Icon, *Bart. Am.* 2. *tab.* 48.
T. europæa. *Mx. Am* 1. *p.* 220. *Muhl. Catal. p.* 38. Not of *Willd. Ait.* nor *Lindl.*
T. europæa, *var.* americana. *Pers. Syn.* 1. *p.* 402. *Nutt. Gen.* 1. *p.* 242. *var.* angustifolia. *Torr. Fl.* 1. *p.* 383.
American Trientalis. *Vulgò*—Chickweed Wintergreen.

Root perennial, creeping. *Stem* 4 to 8 inches high, slender, terete, smooth. *Leaves* 2 to 3 inches long, and half an inch to an inch wide, mostly acuminate at each end (sometimes obtuse and emarginate at apex), smooth, subsessile, aggregated in a terminal whorl, with 2 or 3 small straggling ones on the stem. *Peduncles* few (1 to 3 or 4), filiform, an inch to an inch and half long. *Calyx-segments* lance-linear, very acute. *Corolla* white; lobes oval-lanceolate, acuminate, longer than the calyx. *Stamens* shorter than the corolla. *Ovary* globose; *style* filiform, longer than the stamens. *Fruit* a small dry coriaceous berry, or rather *capsule*, smooth and shining. *Seeds* attached to a central spongy receptacle.

Hab. Shaded rivulets, on the Mica-slate hills: rare. *Fl.* May—June. *Fr.* July.

Obs. The only species of the genus in the U. States.

CLASS VIII. OCTANDRIA.

Order 1. Monogynia.

a. *Ovary inferior.*

193. EPILOBIUM. *L. Nutt. Gen.* 363.

[Greek, *Epi*, upon, and *Lobos*, a pod; the flower being at the apex of a long pod.]

Calyx 4-sepalled; *sepals* united into a long 4-sided tube adnate to the ovary; *limb* 4-parted, caducous. *Petals* 4. *Anthers* subovate, erect; *pollen* not viscid. *Capsule* linear, obtusely 4-angled, 4-valved, many-seeded. *Seeds* crowned with a pappus.

Herbaceous: leaves opposite, or sometimes alternate; flowers axillary and solitary, or in terminal bracteate spikes. *Nat. Ord.* 47. *Lindl.* ONAGRARIÆ.

1. E. COLORATUM, *Muhl.* Stem tercte, more or less pubescent; leaves mostly opposite, lanceolate, acute, serrulate, sub-petiolate, smoothish, with colored veins. *Beck, Bot. p.* 116.
E. tetragonum? *Bart. Phil.* 1. *p.* 183. Not of *L. and others.*
Also, E. palustre. *Florul. Cestr. p.* 46. Not? of *Pursh. Nutt. Hook. Am.* and *Beck.*
COLORED EPILOBIUM. *Vulgò*—Herb Willow.

Root perennial. *Stem* 2 to 3 feet high, much branched above, more or less pubescent, sometimes nearly smooth, the upper part and branches often marked with pubescent lines decurrent from the base of the petioles. *Leaves* 2 to 5 or 6 inches long, and 1 fourth of an inch to near an inch wide, mostly obtuse at base, on very short petioles, mostly opposite, the upper ones, and those on the branches, generally alternate. *Flowers* numerous, small, axillary, on peduncles 1 third to half an inch long. *Calyx* pubescent; limb 4-parted; segments lanceolate, acute, shorter than the petals. *Petals* purple, sometimes nearly white, with purple spots, ovate-oblong, bifid, or emarginate. *Stamens* unequal, shorter than the petals; *anthers* oval, minutely mucronate. *Ovary* long, linear, adnate to the tube of the calyx; *style* rather longer than the stamens; *stigma* thick, clavate, entire. *Capsule* 2 to near 3 inches long, very slender, pubescent; *valves* linear, keeled, opening at summit, and expanding. *Seeds* oblong, or oblanceolate, acute at base, minutely scabrous, arranged in series, end to end,—the base of the superior one apparently resting in the bosom of the pappus of the one next below. *Pappus* simple, light brown, 4 or 5 times as long as the seed.

Hab. Swampy thickets, and moist grounds: frequent. *Fl.* July, Aug. *Fr.* Sept. Oct.

Obs. This plant varies considerably in size and appearance; and, on a revision of my specimens, I apprehend the E. *palustre*, of my Catalogue, is not distinct from it.

2. E. SQUAMATUM, *Nutt.* Stem terete, puberulent; leaves lance-linear, very entire, revolute on the margin, roughish-pubescent, subsessile. *Beck, Bot. p.* 116.
E. oliganthum? *Mx. Am.* 1. *p.* 223. Also? *DC. Prodr.* 3. *p.* 43.
E. lineare. *Muhl. Catal. p.* 39. *Bart. Phil.* 1. *p.* 183. *Bigel. Bost. p.* 147. *Eat. Man. p.* 133.
E. rosmarinifolium. *Pursh, Am.* 1. *p.* 259. *Torr. Fl.* 1. *p.* 392. *Ejusd. Comp. p.* 168. Not of *DC.* &c.
SQUAMOSE EPILOBIUM.

Root squamose, bulbous. *Nutt.* *Stem* 12 to 18 inches high, slender, rigid, simple below, branched or bushy at summit, somewhat hoary with a short pubescence, which is more dense on the branches. *Leaves* about an inch long, and scarcely a line wide, sessile, or nearly so, roughish-pubescent on the upper surface, and midrib beneath, with the margins revolute. *Flowers* few, very small, axillary, on peduncles half an inch to an inch long. *Petals* pale purple, or often nearly white. *Capsule* an inch to an inch and half long, very slender, linear, hoary-pubescent while young.

Hab. Swampy, low grounds; near West Chester: rare. *Fl.* August. *Fr.* October.

Obs. This seems also to come very near the E. *strictum, Muhl. Beck. &c.* or E. *molle, Torr.* That it is *Nuttall's* plant, I have had an opportunity of verifying,—by comparing it with one of his specimens. Prof. *Hooker* appears to consider it a *variety* of E. *Palustre.* Five or six additional species are enumerated in the U States; and in British America, Prof. *Hooker* enumerates 13 species.

194. ŒNOTHERA. *L. Nutt. Gen.* 360.

[Gr. *Oinos*, wine, and *thero*, to hunt; the roots being incentives to wine-drinking.]

Calyx 4-sepalled; *sepals* membranaceous, partially cohering above, united below into a long 4-sided or 8-ribbed tube; *limb* reflexed, and, with part of the tube, caducous. *Petals* 4. *Stamens* erect, or declined; *anthers* linear, incumbent; *pollen* triangular, viscid. *Stigma* 4-cleft (rarely spherical). *Capsule* oblong, or obovoid-clavate, obtusely or acutely 4-angled, 4-celled, 4-valved, many-seeded, adnate to the base of the calyx. *Seeds* naked.

Herbaceous, or *suffruticose:* leaves alternate; flowers axillary, solitary, or in terminal spikes. *Nat. Ord.* 47. *Lindl.* ONAGRARIÆ.

* *Fruit oblong, obtusely 4-angled, subsessile; valves linear.*

1. Œ. BIENNIS, *L.* Stem villose and scabrous; leaves ovate-lanceolate, repand-dentate; fruit subsessile, obtusely 4-angled, somewhat turgid. *Beck, Bot. p.* 118.

Also? Œ. muricata, *of Authors.*

BIENNIAL ŒNOTHERA. *Vulgò*—Evening Primrose. Night willow-herb.

Root annual and biennial, *Torr.* perennial? *Ell.* *Stem* 3 to 5 or 6 feet high, branched, terete, mostly greenish, hairy, often rough with the rigid enlarged base of the hairs. *Leaves* 2 to 6 inches long, and half an inch to an inch wide, often rather obsoletely toothed, pubescent; those near the root on short petioles, the upper ones sessile. *Flowers* rather large, in a terminal leafy or bracteate spike. *Calyx* colored, slightly pubescent externally, with a cylindrical tube 1 to 2 inches in length; *limb* dividing, reflected; *segments* partially cohering, and turned to one side, subulate at apex; the limb, and tube above the ovary, caducous. *Petals* yellow, large, roundish, obcordate, inserted on the calyx. *Stamens* shorter than the corolla; *anthers* long, linear, recurved. *Ovary* oblong, adnate to the base of the tube; *style* rather longer than the corolla; *stigmas* divided into 4 linear spreading segments (or rather 4 stigmas), about 1 fourth of an inch long. *Capsule* subcylindric, an inch to an inch and half long, smoothish, sessile, or subsessile, splitting into 4 valves, with the dissepiments in the middle. *Seeds* numerous, somewhat compressed, ovate? [angular, *Torr.*].

Hab. Fields, fence-rows, woodlands, &c. frequent. *Fl.* June, Sept. *Fr.* Aug, Oct.

Obs. The Œ. *grandiflora, Ait.*—which is almost naturalized about our gardens—is a biennial, of stouter growth than this, with more ovate leaves, larger flowers, and the calyx more pubescent; but seems to be nearly allied to it,—and may, as Dr. *Torrey* suggests, be scarcely more than a *variety.*

* * *Fruit obovoid-clavate, acutely 4-angled, mostly pedicellate; valves obovate.*

2. Œ. FRUTICOSA, *L.* Stem pubescent, often somewhat villose; leaves oblong-lanceolate, denticulate; fruit pedicellate, quadrangular-obovoid; angles acute, or winged. *Beck, Bot. p.* 118.
Also? Œ. ambigua. *D C. Prodr.* 3. *p.* 50. *Florul. Cestr. p.* 46. *Beck, Bot. p.* 118.

SHRUBBY ŒNOTHERA. *Vulgò*—Sun-drops.

Root perennial? *Stem* 1 to 2 or 3 feet high, often branched from the base, rather slender, rigid, terete, mostly purplish, pubescent; pubescence often short, sometimes villose, and almost hirsute. *Leaves* variable in size, and form, usually about 2 inches long, and 1 third to half an inch wide, often linear-lanceolate, sometimes almost rhomboid-ovate, remotely and obscurely denticulate, more or less pubescent and ciliate, sessile. *Flowers* middle-sized, in a terminal bracteate raceme. *Calyx* purplish, often nearly smooth, with the tube near an inch long. *Petals* yellow, sometimes quite pale, broadly obcordate. *Ovary* clavate-oblong; *style* longer than the stamens, and shorter than the corolla. *Capsule* about half an inch long, pubescent, or often smoothish, acutely 4-angled, the angles sometimes winged, the sides keeled, tapering at base to a distinct angular pedicel 1 to 4 lines in length.

Hab. Sterile hills; pastures; woodlands: frequent. *Fl.* June, July. *Fr.* Aug. Sept.

Obs. This plant is found in very different soils and localities, and seems to present some perplexing *varieties.* I think my specimens, generally, rather belong to the Œ *ambigua* of authors, if indeed the latter be a distinct species,—which I doubt. The Œ. *hybrida*, of my Catalogue, although sanctioned by my excellent friend, the late Mr. *Schweinitz*, appears so doubtful, that I am apprehensive it will be safer to rank it among the *varieties*, for the present. Some sixteen or eighteen additional species have been enumerated in the U. States; but it is probable a number of them require a further revision.

The *Gaura biennis*, a kindred plant, may probably yet be found in this County; as I have seen it in abundance near Norristown, in the adjoining County of Montgomery.

195. OXYCOCCUS. *Pers. Nutt. Gen.* 364.

[Greek, *Oxys*, sharp, or acid, and *Kokkos*, a berry; from its acid fruit.]

Calyx adnate to the ovary, with the limb 4-toothed, persistent. *Corolla* deeply 4-parted; lobes linear-lanceolate, revolute. *Filaments* connivent; *anthers* 2-parted, tubular. *Berry* 4-celled, many-seeded.

Trailing evergreen Shrubs: leaves alternate, coriaceous; peduncles solitary, axillary, subterminal, bibracteate. *Nat. Ord.* 172. *Lindl.* VACCINIEÆ.

1. O. MACROCARPUS, *Pursh.* Stem slender, creeping; branches ascending; leaves oblong, obtuse, nearly flat, glaucous beneath; peduncles elongated. *Beck, Bot. p.* 225. ICON, *Bart. Am.* 1. *tab.* 17.
O. palustris, *var.* macrocarpus. *Pers. Syn.* 1. *p.* 419.
Vaccinium macrocarpon. *Willd. Sp.* 2. *p.* 355. *Ait. Kew.* 2. *p.* 359. *Muhl. Catal. p.* 40. *Bigel. Bost. p.* 154.
V. oxycoccus, *var.* oblongifolius. *Mx. Am.* 1. *p.* 228.

LARGE-FRUITED OXYCOCCUS. *Vulgò*—Cranberry.

Stem 1 to 2 feet long, very slender, procumbent, branching; branches assurgent. *Leaves* about half an inch long, oval, or elliptic-oblong, entire, or with distant obsolete serratures, slightly revolute on the margin, smooth, the young

ones pubescent-ciliate at apex; *petioles* very short. *Peduncles* arising from the axils of small ovate leaves near the base of the vernal growth of the upright branches, 3 fourths of an inch to an inch or more in length, recurved, pubescent, 1-flowered, with 2 nearly opposite lance-ovate acuminate ciliate-pubescent *bracts* a short distance below the flower. *Flowers* nodding. *Calyx-segments* short, broad-ovate, acute, ciliate, purplish. *Corolla* pale purple; lobes reflexed, or revolute. *Stamens* inserted on the base of the corolla; *filaments* dark purple, short, flatted, pubescent on the margin; *anthers* long, linear, 2-horned, or bifid to the middle, each division tubular. *Style* rather longer than the stamens; *stigma* simple. *Berry* subglobose, about half an inch in diameter, crowned with the persistent calyx-segments, smooth, bright red, or crimson, when mature, persistent during part of the winter.

Hab. Swamps; Wynn's meadows: not common. *Fl.* May—June. *Fr.* October.

Obs. This little shrub, so justly prized for its fine acid fruit, is very rare, except in the northern parts of the County,—where it is occasionally to be met with in considerable quantities; especially in the vicinity of Wynn's meadows. One or two additional species are enumerated in the U. States.

b. *Ovary superior.* † *Flowers perfect.*

196. RHEXIA. *L. Nutt. Gen.* 359.

[Greek, *Rhexis*, a rupture; being supposed to be remedial in that disorder.]

Calyx persistent, tubular; tube ovoid-ventricose at base, contracted to a neck above; limb 4-cleft. *Petals* 4, obovate. *Anthers* declinate, attached to the filaments behind, naked at base. *Capsule* free in the ventricose base of the calyx, 4-celled. *Seeds* numerous, cochleate.

Herbaceous, or suffruticose: stem mostly quadrangular; leaves opposite, simple, conspicuously 3-nerved; flowers mostly in terminal trichotomous corymbose cymes. *Nat. Ord.* 54. *Lindl.* MELASTOMACEÆ.

1. R. VIRGINICA, *L.* Stem with winged angles, somewhat hairy; leaves sessile, oval-lanceolate, ciliate-serrate; calyx sparsely hispid. *Beck, Bot. p.* 127. ICON, *Bart. Am.* 1. *tab.* 4.

VIRGINIAN RHEXIA. *Vulgò*—Deer Grass.

Root perennial. *Stem* 9 to 18 inches high, often trichotomously branched above, 4-angled, angles winged, sparingly hispid with membranaceous bristles. *Leaves* 1 to 3 inches long, and half an inch to an inch wide, acute, with 3 prominent nerves, sprinkled with bristly hairs on the upper surface, and nerves beneath, closely sessile, somewhat connected at base by a bristly ring. *Calyx* urceolate, somewhat glandular-hispid; segments lanceolate, acuminate. *Petals* bright purple, large, obovate, hispid externally, caducous. *Stamens* shorter than the petals, inserted at the orifice of the calyx; *filaments* subulate, purple; *anthers* yellow, long, sublinear, recurved, somewhat incumbent, or adnate to the filaments nearly to the base, then declined almost horizontally, each with a small setaceous process near where the filament is apparently articulated to the anther. *Ovary* superior, contained in the ventricose tube of the calyx; *style* rather longer than the stamens, curved or declined; *stigma* obtuse. *Capsule* subglobose, inclosed in the ventricose tube of the calyx. *Seeds* numerous, small, incurved, or cochleate, with an enlarged umbilicate base, striate-grooved, muricate or scabrous under a lens, of a pale tawny color.

Hab. Swamps, in the Mica-slate range: not common. *Fl.* August. *Fr.* Sept. Oct.

Obs. Seven or eight additional species are enumerated in the U. States

197. TROPÆOLUM. *L.* *DC. Prodr.* 1. *p.* 683.

[Latin, *Tropæum*, a trophy; from a fancied resemblance of the flower to a banner.]

Calyx colored, 5-parted, the superior segment spurred at base. *Petals* 5, unequal, the 2 upper ones sessile, the 3 lower ones unguiculate. *Stigmas* 3, acute. *Fruit* of 3 connate carpels, fleshy, or subcoriaceous; each carpel 1-seeded, indehiscent.

Herbaceous: stem succulent, diffuse or volubile; leaves alternate, peltate, with radiating nerves; peduncles axillary, 1-flowered. *Nat. Ord.* 124. *Lindl.* TROPÆOLEÆ.

1. T. MAJUS, L. *Leaves suborbicular, obscurely repand-lobed; nerves not exserted at apex; petals obtuse.* DC. l. c.

GREATER TROPÆOLUM. Vulgò—*Nasturtium. Indian Cress.* Gall. *Grande Capucine.* Ger. *Die Kapuzinerblume.* Hisp. *Capuchina.*

Root *annual.* Stem 4 *to* 6 *or* 8 *feet long, somewhat volubile and climbing, branching, thick, fleshy, smooth, pale green.* Leaves *peltate, suborbicular,* 2 *to* 3 *inches in diameter, with the nerves radiating from the petiole, smooth above, puberulent beneath;* petioles 3 *to* 6 *inches long.* Peduncles *mostly longer than the petioles.* Calyx *orange-colored, with tinges of green; the upper segment with a spur at base about an inch long, somewhat curved at the point.* Corolla *yellowish, or reddish-orange, with dark purple stripes, and spots; the* 3 *lower petals fringed at base, supported on slender claws.* Fruit *somewhat* 3*-lobed, sulcate, fleshy, at length suberose, or coriaceous.*

Hab. *Gardens: frequent.* Fl. *June—Sept.* Fr. *August—October.*

Obs. *An ornamental plant; cultivated chiefly for the* young fruit,—*which is prepared as a condiment, and affords a tolerable substitute for* capers. *Probably the only species which has been introduced into the U. States.*

198. DIRCA. *L.* *Nutt. Gen.* 367.

[Greek, *Dirka*, a fountain; from its usual place of growth.]

Perianth corolla-like, tubular-campanulate; limb obsolete, erosely dentate. *Stamens* unequal, exserted. *Style* filiform, longer than the stamens. *Berry* 1-celled, 1-seeded.

A Shrub: leaves simple, alternate; flowers preceding the leaves, in small sessile fascicles, from terminal and lateral buds. *Nat. Ord.* 65. *Lindl.* THYMELEÆ.

1. D. PALUSTRIS, *L.* Leaves obovate-oblong, subsessile; buds densely villose, mostly 3-flowered. *Beck, Bot. p.* 307.

MARSH DIRCA. *Vulgò*—Leather-wood.

Stem 2 to 4 or 5 feet high, slender, much branched from the base; the branches apparently jointed, flexible, with a very tough greyish-yellow bark. *Leaves* 3 or 4 inches long, and an inch and half to 2 inches wide, oval, or obovate-oblong, often subrhomboid, tapering and somewhat acute at each end, entire, pale green, smooth above, pubescent and rather glaucous beneath; *petioles* very short (on long petioles, *Torr.*). *Flowers* appearing before the leaves, mostly in little fascicles of 3 from a bud (sometimes 2, and 1,), on thick pedicels near half an inch long. *Perianth* pale yellow, about as long as the pedicels, dilated above, with the summit irregularly toothed. *Berry* ovoid, about 1 fourth of an inch in diameter [yellowish when mature, *Marsh.*]. *Seed* solitary, large, compressed, ovate.

Hab. Shaded rivulets, on the Mica-slate hills: not common. *Fl.* April. *Fr.*

Obs. The pliable branches of this shrub are so strong and tough that they may be used as ligatures;—whence the common name, *Leatherwood.* It is the only species of the genus.

†† *Flowers mostly polygamous.*

199. DIOSPYROS. *L. Nutt. Gen.* 797.

[Greek, *Dis, dios*, Jupiter, and *Pyros*, fruit; the application not obvious.]

Dioicously polygamous: *Calyx* 4-parted. *Corolla* urceolate, 4-cleft. Staminate Fl. *Stamens* often 16. *Ovary* abortive. Fertile Fl. *Stamens* 8 to 12, mostly abortive. *Ovary* 4-angled; *style* 4 or 5-cleft. *Berry* subglobose, 8 to 12-seeded.

Trees: leaves simple, alternate; flowers axillary, subsessile, fertile ones solitary, sterile ones mostly in threes. *Nat. Ord.* 202. *Lindl.* Ebenaceæ.

1. D. virginiana, *L.* Leaves oval or ovate-oblong, acuminate, entire, reticulately veined, nearly smooth; petioles pubescent; buds smooth. *Beck, Bot. p.* 229. Icon, *Mx. f. Sylva.* 2. *tab.* 93.

Virginian Diospyros. *Vulgò*--Persimmon. *Gallicè*--Plaqueminier.

Stem 20 to 40 feet high, and 8 to 12 or 15 inches in diameter, irregularly branched. *Leaves* 2 or 3 to 5 inches long, and 1 to 2 inches wide, subcoriaceous, green above, paler or glaucous beneath, on pubescent petioles half an inch to near an inch long. *Calyx* of the fertile flowers persistent. *Corolla* ochroleucous, or pale greenish yellow, of a thick leathery texture, obtusely 4-angled. *Berry* obovoid, or roundish-oval, about an inch in diameter, reddish orange when mature. *Seeds* large, compressed.

Hab. Rich bottom lands; Brandywine: frequent. *Fl.* June. *Fr.* Octo.—Nov.

Obs. The ripe *fruit* of this is sweet and luscious, after being subjected to the action of frost; but is remarkably harsh and astringent in a green state. The *bark* is tonic and astringent. For an interesting account of the properties of the plant, see the Inaugural Thesis of the late Prof. *Woodhouse*, of the University of Pennsylvania. *Pursh* enumerates one other species in the U. States,—but it is probably only a variety.

200. ACER. *L. Nutt. Gen.* 366.

[Latin, *Acer*, sharp; the wood having been used for pikes, or lances.]

Monoicously, or dioicously polygamous (sometimes Dioicous): *Calyx* 5-cleft, or 5-parted. *Petals* 5, or 0. *Stamens* sometimes 5, 7, or 9. *Samaræ* in pairs, winged, diverging, with the outer margin thicker and obtuse, united at base, by abortion 1-seeded.

Trees, or shrubs: branches mostly opposite; leaves opposite, palmate-lobed (or rarely pinnate); flowers lateral and terminal, aggregated, or in subcorymbose pendulous racemes. *Nat. Ord.* 101. *Lindl.* Acerineæ.

1. A. rubrum, *L.* Leaves generally 3-lobed with the sinuses acute, subcordate at base, unequally and incisely toothed; flowers aggregated, on rather long pedicels; ovary glabrous. *Beck, Bot. p.* 63. Icon, *Mx. f. Sylva.* 1. *tab.* 41.

Red Acer. *Vulgò*—Red Maple. Swamp Maple.

Stem 30 to 60 feet high, mostly rather slender, sometimes 2 feet or more in diameter at base, branched, young branches purplish. *Leaves* 2 to 4 inches long, and about as wide as long, mostly with 3 acute spreading lobes, sometimes obscurely 5-lobed, when young pubescent beneath, at length smooth except along the nerves, and glaucous; *petioles* 1 or 2 to 5 inches long. *Flowers* appearing before the leaves, in sessile purple (or often yellowish) fascicles from the lateral buds, mostly in fives. *Calyx* of the *perfect* flower colored, petaloid, 5-parted; segments ovate-

oblong, rather obtuse. *Petals* bright purple (or often yellowish), linear-oblong, narrow, alternate with and about as long as the calyx-segments. *Stamens* mostly 5, rather shorter than the petals, inserted under the edge of a hypogynous crenate-lobed disk; *anthers* dark purple. *Ovary* twin, or 2 lobed, compressed, dilated and truncate at summit, smooth; *stigmas* long, filiform, pubescent, sessile (or rather 2 styles?). *Fruit* in pairs, diverging; each *samara* with a veined membranaceous wing near an inch long, thickened and obtuse on the outer margin, very thin on the inner margin. *Pedicels* of the *flowers* about half an inch long, of the *fruit* 1 to 3 inches long.

Hab. Moist low grounds; swampy woodlands: common. *Fl.* April. *Fr.* Sept.

Obs. The variety with *yellowish flowers*, noticed by *Marshall*, is very frequent here. The *wood* of this species, in which the fibres are often handsomely curled, is much used in the manufacture of tables, chairs, gun-stocks, &c. and the refuse timber makes good fuel. The *bark* affords a dark purplish-blue dye, and makes a pretty good bluish-black ink. All the species yield more or less *Sugar* from the sap.

2. A. ERIOCARPUM, *Mx.* Leaves palmately 5-lobed with the sinuses deep and rather obtuse, silvery-glaucous beneath, subcordate or often truncate at base, unequally and incisely toothed, teeth acuminate; flowers apetalous, aggregated, on short pedicels; ovary tomentose. *Beck, Bot. p.* 63. Icon, *Mx. f. Sylva.* 1. *tab.* 40.

A. glaucum. *Marsh. Arbust. p.* 2.

A. dasycarpum. *Willd. Sp.* 4. *p.* 985. *Pers. Syn.* 1. *p.* 417. *Ait. Kew.* 5. *p.* 446. *Muhl. Catal. p.* 95. *Pursh, Am.* 1. *p.* 266. *Nutt. Gen.* 1. *p.* 252. *Bart. Phil.* 1. *p.* 185. *Ell. Sk.* 1. *p.* 449. *Bigel. Bost. p.* 379. *Torr. Fl.* 1. *p.* 396. *Ejusd. Comp. p.* 169. *Lindl. Ency. p.* 864. *Hook. Am.* 1. *p.* 113. *Eat. Man. p.* 2.

Woolly-fruited Acer. *Vulgò*—Silver-leaved Maple. White Maple.

Stem 40 to 60 feet high, and often 2 feet or more in diameter at base, much branched; the young branches virgate, slender, somewhat pendulous or inclining to drop. *Leaves* 3 to 6 inches long, and nearly as wide as long, deeply 5-lobed; lobes narrowed at base, unequally and acuminately incised-dentate, or often sublobed; the young leaves pubescent, at length smooth, and bluish white or glaucous beneath; *petioles* 2 to 4 or 5 inches long. *Flowers* on short pedicels, aggregated, pale yellowish-purple. *Stamens* 3 to 5 or 6. *Ovary* tomentose. *Fruit* with large wings (near 3 inches long, and 3 fourths of an inch wide), dilated towards the extremity, and curved on the outer or thick margin.

Hab. Bank of the Schuylkill, near Black rock: rare. *Fl.* April. *Fr.* June.

Obs. This is a rare tree in Chester County, and has only been found along the Schuylkill. It is much cultivated of late, as an ornamental shade,—particularly in our cities; and is often mistaken for the true *Sugar Maple.* The large *samara* has some resemblance to the wing of a huge grasshopper. The young leaves emit a peculiar and rather disagreeable odor.

3. A. SACCHARINUM, *L.* Leaves broad, subcordate at base, palmately 5-lobed with the sinuses obtuse, lobes acuminate, coarsely sinuate-dentate; flowers pendulous, on long corymbose pedicels; fruit turgid, smooth. *Beck, Bot. p.* 63. Icon, *Mx. f. Sylva.* 1. *tab.* 42.

A. saccharum. *Marsh. Arbust. p.* 4.

Saccharine Acer. *Vulgò*—Sugar Maple.

Stem 40 to 60 or 80 feet high, and 2 to 3 feet in diameter, branching, with a smoothish light colored bark. *Leaves* 3 to 5 inches long, and generally rather

wider than long, green and smooth above, paler and pubescent beneath, the nerves and axils hirsute (quite villose beneath when young), truncate and a little cordate at base, sometimes rather auriculate; lobes palmately diverging, coarsely and sparingly sinuate-toothed, abruptly narrowed to a slender acumination; *petioles* 2 to 4 inches long. *Flowers* pale greenish yellow, pendulous on fasciculate filiform villose pedicels an inch or more in length. *Calyx* subcampanulate, truncate, the *limb* coarsely crenate, or repand-toothed, fringed with long hairs. *Petals* 0. *Stamens* exserted. *Ovary* hirsute, compressed, 2-horned with the young wings of the fruit; *style* nearly as long as the ovary; *stigmas* filiform, pubescent. *Fruit* turgid, ovoid, smooth; the wings about an inch long, nearly parallel, or slightly diverging, dilated towards the extremity, and often rounded at apex.

Hab. Rich woodlands, along Brandywine: rare. *Fl.* April—May. *Fr.* Sept.

Obs. This handsome tree,—so valuable to the settlers in the interior, for the copious supply of *Sugar* which it yields,—is not common in Chester County; but it occurs frequently near the forks of Brandywine. The beautiful *wood*, used by Cabinet-makers under the name of *Bird's-Eye Maple*, is, I believe, afforded by this species,—as also some of the varieties of *Curled Maple*.

4. A. Negundo, *L.* Leaves ternate, or pinnate by fives; leaflets rhomboid-oval, or oval-lanceolate, acuminate, unequally and coarsely incised-dentate; flowers dioicous, in simple pendulous racemes. *Torr. Fl.* 1. *p.* 398. Icon, *Mx. f. Sylva.* 1. *tab.* 46.
Negundo fraxinifolium. *Nutt. Gen.* 1. *p.* 253. *DC. Prodr.* 1. *p.* 596. *Hook. Am.* 1. *p.* 114. *Beck, Bot. p.* 64.
Negundium americanum. *Lindl. Ency. p.* 864.
Vulgò—Ash-leaved Maple. Box Elder.

Stem 15 to 20 or 30 feet high, branching; branches rather erect, with a smoothish yellowish green bark. *Leaves* mostly trifoliate, sometimes odd-pinnate by fives, on a common petiole 3 or 4 inches long; *leaflets* 3 to 5 inches long, and 1 to 3 inches wide, varying from lanceolate to lance-ovate, the terminal odd one somewhat rhomboid-oval, all conspicuously acuminate, coarsely incised-dentate above the middle, mostly entire near the base, on short petioles. *Flowers* yellowish green, pendulous. *Staminate flowers* mostly pentandrous, on very slender slightly pubescent pedicels 1 to 2 inches long. *Pistillate flowers* in simple pendulous racemes; *pedicels* opposite, about half an inch long; *ovary* hirsute; *stigmas* linear, diverging, subsessile. *Fruit* oblong, pubescent, the wings about an inch long, diverging, dilated towards the extremity, with the outer margin rounded, or incurved at apex.

Hab. Wet low grounds, along Brandywine: not common. *Fl.* April. *Fr.* Sept.

Obs. This differs considerably, in habit, from the preceding species, and has been separated from them, by several modern Botanists; but it seems to be so essentially an *Acer*, in its fruit, that I incline to continue it with the genus. Five or six additional species are enumerated in the U. States.

[Trientalis americana. *Heptandria Monogynia.*]

[Monotropa lanuginosa. *Decandria Monogynia.*]

Order 2. Digynia.

[Ulmus americana. *Pentandria Digynia.*]

[Chrysosplenium americanum. *Decandria Digynia.*]

Order 3. Trigynia.

201. POLYGONUM. *L. Nutt. Gen.* 370.

[Greek, *Polys*, many, and *Gonu*, a knee, or joint; the stem being much jointed.]

Perianth mostly 5-parted, colored or corolla-like, persistent. *Stamens* 5 to 9, mostly 8. *Ovary* superior; *styles* 2 or 3. *Seed* or *Nut* solitary, compressed, or triquetrous, mostly covered by the persistent perianth.

Herbaceous: stem jointed; leaves alternate, adhering at base to sheathing stipules; flowers in axillary and terminal clusters and spikes, or paniculate racemes. *Nat. Ord.* 156. *Lindl.* POLYGONEÆ.

† *Flowers axillary.*

1. P. AVICULARE, *L.* Stem mostly procumbent; leaves elliptic-lanceolate, acute, narrow, sessile; flowers subsessile. *Beck, Bot. p.* 300. P. aviculare, *var.* angustifolium. *Mx. Am.* 1. *p.* 237. *Pursh, Am.* 1. *p.* 269. *Nutt. Gen.* 1. *p.* 254. *Bart. Phil.* 1. *p.* 186.

BIRD POLYGONUM. *Vulgò*—Knot-grass.

Gallicè—Trainasse. *Germanicè*—Der Wegetritt. *Hisp.*—Centinódia.

Root annual, subligneous, fibrous. *Stem* 6 to 12 or 15 inches long, slender, more or less procumbent, much branched, striate, smooth. *Leaves* half an inch to an inch long, and 1 eighth to 1 third of an inch wide, varying from linear-lanceolate and acute to elliptic and oblanceolate, attenuate at base, sessile, smooth, scabrous on the margin. *Stipules* scarious, white, remotely nerved, parted into lanceolate acuminate segments at summit. *Flowers* small, in axillary clusters of 2 to 3, subsessile. *Perianth* green, the segments edged with white, and often tinged with purple. *Stamens* often 5 (8, *Authors*). *Stigmas* 3, subsessile, diverging. *Seed* ovoid-triquetrous, acuminate, punctate-striate, dark brown.

Hab. About houses, gardens, foot-ways, &c. common. *Fl.* June, Oct. *Fr.* Aug. Nov.

Obs. This has every appearance of being an introduced plant, in all its localities here.

2. P. ERECTUM, *L.* Stem mostly erect; leaves broad-oval, or elliptic-oblong, rather obtuse, subpetiolate; flowers pedicellate, pentandrous. *Beck, Bot. p.* 300.
P. aviculare, *var.* latifolium. *Mx. Am.* 1. *p.* 237. *Pursh, Am.* 1. *p.* 269. *Nutt. Gen.* 1. *p.* 254. *Bart. Phil.* 1. *p.* 186. *Torr. Fl.* 1. *p.* 400.

ERECT POLYGONUM.

Plant often yellowish green. *Root* annual? subligneous, fibrous. *Stem* 1 to 2 and 3 feet high, mostly erect, sometimes decumbent, branched, striate, smooth; lower branches spreading, assurgent. *Leaves* half an inch to 2 inches long, and 1 fourth to 3 fourths of an inch wide, obtuse, or sometimes rather acute, smooth, minutely scabrous on the margin,—the stem leaves considerably larger than those on the branches, and distinctly petiolate. *Stipules* scarious, brownish, remotely nerved, lacerate at summit. *Flowers* in axillary clusters of 2 or 3, distinctly pedicellate. *Perianth* yellowish green. *Styles* 3, very short. *Seed* triquetrous, somewhat striate-punctate, brown.

Hab. About houses, yards, and gardens: frequent. *Fl.* Aug.-Octo. *Fr.* Sept.-Nov.

Obs. This is readily distinguished, by its size and habit, from the preceding; but it must be confessed, when we come to the botanical details, that they are nearly allied.

3. P. TENUE, *Mx.* Stem erect, slender, branched, acutely angled; leaves lance-linear, erect, cuspidate; stipules tubular, lacerate at summit, with the segments setaceously acuminate; flowers subsessile, mostly solitary, alternate. *Beck, Bot. p.* 301.
P. linifolium. *Muhl. Catal. p.* 40. *Bart. Phil.* 1. *p.* 186. *Bart. Am.* 3. *p.* 69. ICON, *tab.* 95. *f.* 2.
SLENDER POLYGONUM.

Root annual, subligneous, fibrous. *Stem* 6 to 12 or 15 inches high, sometimes simple, generally with upright and somewhat flexuose branches, often much branched from near the base, with acute scabrous angles. *Leaves* an inch to an inch and half long, and 1 to 2 lines wide, abruptly acuminate, 3-nerved, finely ciliate-serrulate on the margin, sessile. *Stipules* tubular, mostly of a dark chesnut brown, sheathing the stem about 1 third of an inch below the leaves, divided at the base of the leaves into several lance-linear segments with long setaceous points. *Flowers* generally solitary, sometimes in pairs, on very short pedicels. *Perianth-segments* oblong, obtuse, with green keels, and whitish margins. *Stamens* short; *filaments* dilated at base. *Styles* 3, very short. *Seed* ovoid-triquetrous, nearly black, angles smooth and shining, sides a little concave, roughish-punctate under a lens.

Hab. Dry, sandy banks; Mica-slate hills: frequent *Fl.* July-Aug. *Fr.* Sept-Oct.

†† *Flowers in terminal or axillary Spikes.*

4. P. VIRGINIANUM, *L.* Stem simple, leaves oval-lanceolate and lance-ovate, acuminate; spike terminal, virgate, slender, very long; flowers pentandrous; perianth unequally 4-parted; styles 2, long, persistent. *Beck, Bot. p.* 301.
P. virginicum. *Bigel. Bost. p.* 156.
VIRGINIAN POLYGONUM.

Root perennial. *Stem* 2 to 3 or 4 feet high, simple, somewhat angular, striate-ribbed, pilose above, near the joints. *Leaves* 3 to 6 inches long, and an inch and half to 3 inches wide, the upper surface and midrib somewhat hairy, the margin bristly-ciliate; *petioles* 1 third to 3 fourths of an inch long. *Stipules* tubular, sheathing the stem near half an inch above the petioles, very hairy, truncate and ciliate at summit. *Spike* 12 to 18 inches long, terminal, slender, leafless, mostly solitary, sometimes 1 or 2 smaller ones from the axils of the upper leaves. *Flowers* mostly solitary, remote, and a little recurved, conspicuously articulated to short pedicels, which proceed from tubular truncate bristly-ciliate sheaths. *Perianth* greenish white, often purplish, 4-parted; segments unequal. *Stamens* 5, unequal. *Styles* 2, as long as the ovary, oblique; *stigmas* simple, recurved. *Seed* compressed, ovate, lenticular, chesnut brown when mature, smooth and shining, beaked by the persistent styles.

Hab. Rich woodlands, and borders of thickets; frequent. *Fl.* July-Aug. *Fr.* Sept.

5. P. PUNCTATUM, *Ell.* Stem branched; leaves lanceolate, pellucid-punctate; spikes terminal and axillary, filiform, nodding; fascicles of flowers rather remote; perianth glandular-punctate; styles 2, or 3; seed lenticular, or triquetrous. *Beck, Bot. p.* 301.
P. Hydropiper. *Mx. Am.* 1. *p.* 238. *Muhl. Catal. p.* 40. *Bigel. Bost. p.* 156. Not? of *L.*
P. hydropiperoides. *Pursh, Am.* 1. *p.* 270. *Nutt. Gen.* 1. *p.* 255. Not of *Mx.* nor! *Bigel.*
PUNCTATE POLYGONUM. *Vulgò*—Water-pepper.

Root annual ? (perennial, *Ell. Torr.*). *Stem* 12 to 18 inches high, slender, more or less branched, sometimes decumbent, smooth, often purple. *Leaves* 2 to 4 inches long, and 1 third to 3 fourths of an inch wide, tapering to a slender apex, acute at each end, subsessile, often hairy on the midrib and upper surface, and scabrous-ciliate on the margin, marked with numerous small pellucid punctures. *Stipules* tubular, hairy, truncate, fringed with bristles from 1 third to 2 thirds the length of the tube. *Spikes* 2 to 4 inches long, very slender and weak, loose-flowered, at first nodding. *Flowers* articulated to pedicels about as long as the perianth, in fascicles of 2 to 4 proceeding from each truncate bristly-ciliate sheath, the lower ones remote. *Perianth* green, covered with brownish glandular dots, the margins of the segments white, often tinged with purple. *Stamens* often 7. *Ovary* lenticular with 2 styles, or triquetrous with 3 styles; *styles* reflexed or recurved near the middle, united at base, scarcely half as long as the ovary, rather persistent; *stigmas* capitate. *Seed* compressed, ovate and lenticular, or ovoid-triquetrous, in either case with a short acumination, purplish black when mature, roughish punctate under a lens.

Hab. Moist waste grounds; margins of pools & ditches: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. The *seeds* of this species are generally compressed, with 2 styles; but often on the same plant they are triquetrous, and then have 3 styles. It is a very acrid plant, and sometimes causes obstinate ulcerative inflammation, when applied to the skin.

6. P. MITE, *Pers.* Leaves linear-lanceolate, narrow; spikes terminal and subterminal, slender; fascicles of flowers rather crowded; perianth not glandular-punctate; styles 3. *Beck, Bot. p.* 301.
P. hydropiperoides. *Mx. Am* 1. *p.* 239. *Bigel? Bost. p.* 156. Not of *Pursh.* and *Nutt.*
P. barbatum? *Muhl. Catal. p.* 40. *Bart. Phil.* 1. *p.* 188. Not of *Willd.* and *Pers.*

MILD POLYGONUM.

Root perennial. *Stem* 1 to 2 feet long, erect, or often decumbent, and radicating at the lower joints, terete, smoothish, a little branched towards the summit. *Leaves* 2 to 4 inches long, and 1 fourth to 3 fourths of an inch wide, sessile, roughish-punctate beneath, punctures not pellucid, the midrib nerves and margins scabrous with short appressed hairs. *Stipules* tubular, hirsute, truncate, fringed with bristles nearly as long as the tube. *Spikes* few (usually 2 or 3), chiefly terminal, 1 to 2 inches long. *Flowers* on short pedicels, in fascicles of 2 or 3, from green or often purple truncate bristly-ciliate sheaths. *Perianth* mostly purple, without glandular dots, the margins of the segments pale red, or nearly white. *Styles* mostly 3, rarely 2. *Seed* triquetrous, purplish black, smooth and shining.

Hab. Wet places; margins of rivulets: frequent. *Fl.* Aug. *Fr.* Sept.—October.

Obs. This is sometimes found growing in the water, and partly submersed; in which cases the stem is often decumbent, and rooting at the joints.

7. P. PERSICARIA, *L.* Leaves lanceolate, with hairy ciliate stipules; spikes terminal and axillary, ovoid-oblong, dense-flowered, erect, on smooth peduncles; flowers hexandrous; styles 2. *Beck, Bot. p.* 302.

Vulgò—Lady's Thumb. Spotted Knot-weed.

Gallicè—Persicaire. *Germanicè*—Flöhkraut. *Hisp.*—Persicaria.

Root annual. *Stem* 1 to 2 feet high, erect, branching, smooth, often purplish. *Leaves* 2 to 4 inches long, and half an inch to an inch wide, tapering at base to

short petioles, roughish-punctate, the midrib and margins scabrous with short appressed hairs, the upper surface often marked with a dark-colored lunate or subcordate spot. *Stipules* tubular, hairy, truncate, fringed with bristles about 1 third the length of the tube. *Spikes* about an inch long, on smooth peduncles. *Flowers* on short pedicels; fascicles crowded. *Perianth* purple, often bright crimson, smooth. *Stamens* 6. *Styles* 2, united at base. *Seed* mostly compressed, ovate (sometimes triquetrous), with a short acumination, mucronate by the persistent base of the styles, black, smooth and shining.

Hab. Waste places; roadsides, &c. frequent. *Fl.* August. *Fr.* Sept.—October.

Obs. This appears to be a naturalized foreigner.

8. P. PENNSYLVANICUM, *L.* Leaves lanceolate, with smooth naked stipules; spikes terminal and axillary, oblong, on glandular-hispid peduncles; styles 2. *Beck, Bot. p.* 302.

PENNSYLVANIAN POLYGONUM.

Root annual. *Stem* 2 to 3 or 4 feet high, smooth below, geniculate, with tumid joints, paniculately branched above, branches glandular-hispid. *Leaves* 3 to 6 inches long, and an inch to an inch and half wide, petiolate, roughish-punctate beneath, the midrib nerves and margins scabrous with short appressed hairs. *Stipules* tubular, smooth, scarious, truncate, not fringed. *Spikes* numerous, 1 to 2 inches long, large, and often somewhat nodding on the glandular-hispid peduncles. *Flowers* in crowded fascicles, on pedicels rather longer than the smoothish sheathing bracts. *Perianth* bright palish purple, large, smooth. *Stamens* often 6. *Styles* 2, united at base. *Seed* compressed, orbicular-ovate, beaked by the persistent base of the styles, purplish black, minutely puncticulate under a lens.

Hab. Moist low grounds; roadsides: common. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. This is usually of a larger growth than the preceding, and is readily distinguished by its hispid peduncles.

9. P. AMPHIBIUM, *L.* var. *terrestre, Torr ?* Stem nearly erect; leaves oblong-lanceolate, acuminate, obtuse and sometimes a little cordate at base, petiolate, with the lower stipules smooth; spikes terminal, cylindric, dense-flowered, on glandular-hispid peduncles; flowers pentandrous; styles 2. *Beck, Bot. p.* 301.

P. amphibium, *var.* emersum. *Mx. Am.* 1. *p.* 240.

P. coccineum. *Muhl. Catal. p.* 40. *Nutt. Gen.* 1. *p.* 255. *Bart. Phil.* 1. *p.* 188. Not of *Bigel.* nor *Eat. var.* terrestre. *Pursh, Am.* 1. *p.* 271.

AMPHIBIOUS POLYGONUM.

Root perennial, creeping. *Stem* 12 to 18 inches long, stout, striate, smooth below, hirsute near the summit, decumbent at base, joints tumid, radicating at the lower ones. *Leaves* 4 to 6 inches long, and 1 to 2 inches wide, sometimes ovate-lanceolate, the midrib nerves and margins scabrous with short appressed hairs, which are dilated at base; the upper leaves subsessile, the lower ones petiolate. *Stipules* tubular, truncate, the lower ones smooth and naked, the upper ones hirsute. *Spikes* few (1, 2 or 3), 2 to 3 inches long, cylindrical, rather slender, on glandular-hispid peduncles. *Flowers* crowded, on pedicels shorter than the hirsute sheathing bracts. *Perianth* bright purple; segments obtuse, spreading. *Stamens* 5. *Styles* 2, slender, longer than the perianth, united at base; *stigmas* capitate. *Seed* compressed, ovate.

Hab. Margin of the Schuylkill, at Black Rock; rare. *Fl.* Aug.—Sept. *Fr.* Oct.

Obs. Collected by DAVID TOWNSEND, Esq. in 1829. It has not been found elsewhere, I believe, within the County. Our plant appears to be the *var. emersum, Mx.* or *terrestre*, of *Pers. Torr. &c.* I have a specimen from my friend Dr. *Freedley*, of Philadelphia, in which the leaves are nearly elliptic, and cordate at base, with the *peduncles smooth*; and which I suppose to be the *var. natans, Mx.* or *aquaticum*, of *Hooker*, and others.

10. P. ORIENTALE, *L.* Stem erect, paniculately branched, hirsute; leaves large, ovate, acuminate, petiolate, with hairy salverform ciliate stipules; spikes terminal, dense-flowered, nodding, on hirsute peduncles; flowers heptandrous; styles 2. *Beck, Bot. p.* 302.

ORIENTAL POLYGONUM.

Root annual. *Stem* 4 to 6 or 7 feet high, paniculately branched above, hirsute. *Leaves* 4 to 6 inches long, and 2 to 4 inches wide, ovate and lance-ovate, often a little cordate at base, on long hirsute petioles, which are somewhat winged by the decurrence of the leaves. *Stipules* tubular, hairy, with the limb spreading, or reflexed, and ciliate. *Spikes* numerous, 2 to 3 inches in length, oblong, nodding, on hirsute peduncles. *Flowers* crowded, on pedicels rather longer than the pubescent ciliate sheathing bracts. *Perianth* bright purple, large. *Stamens* 7, as long as the perianth. *Styles* 2, united at base. *Seed* compressed, orbicular-ovate, smooth, mucronate by the base of the styles, purplish black when mature.

Hab. Gardens, and waste places: frequent. *Fr.* July—Sept. *Fr.* Sept.—October.

Obs. A well known ornamental species,—extensively naturalized about gardens, and cultivated lots.

††† *Flowers in paniculate Clusters, or Racemes.* * *Stem aculeate.*

11. P. SAGITTATUM, *L.* Stem flaccid, procumbent, 4-angled, retrorsely aculeate; leaves sagittate, acute, on short petioles; flowers crowded, subcapitate; heads on smoothish peduncles. *Beck, Bot. p.* 302. ICON, *Bart. Am.* 3. *tab.* 101.

SAGITTATE POLYGONUM. *Vulgò*—Arrow-leaved Tear-thumb.

Root annual. *Stem* 2 to 4 feet long, slender, branching, procumbent, or supported by other plants, acutely quadrangular, the angles armed with sharp recurved prickles. *Leaves* 1 to 3 inches long, and half an inch to an inch wide, sagittate at base, retrorsely aculeate on the midrib and petiole; *petioles* 1 fourth to 3 fourths of an inch long. *Stipules* lanceolate, amplexicaul or sheathing, smooth. *Flowers* in pedunculate heads, or clusters. *Perianth* pale red, the margins of the segments nearly white. *Seed* ovoid-triquetrous, acuminate, smooth, purplish black when mature.

Hab. Swampy thickets, and low wet grounds: common. *Fl.* August. *Fr.* Sept.

12. P. ARIFOLIUM, *L.* Stem flaccid, procumbent, sulcate-angled, retrorsely aculeate; leaves hastate, acuminate, on long petioles; flowers distinct, subracemose; racemes few-flowered, on glandular-hispid peduncles; stamens 6; styles 2. *Beck, Bot. p.* 303. ICON, *Bart. Am.* 3. *tab.* 100.

ARUM-LEAVED POLYGONUM. *Vulgò*—Halbert-leaved Tear-thumb.

Root annual. *Stem* 3 to 6 feet long, slender, but coarser than the preceding, branching, procumbent, or supported by other plants, angular-sulcate, retrorsely aculeate, often purple. *Leaves* 2 to 5 inches long, and 1 to 3 inches wide, hastate-

lobed at base, lobes acuminate, upper surface sparsely pilose, minutely pubescent beneath, midrib and nerves hirsute; *petioles* half an inch to 3 inches long, sulcate-angled, retrorsely aculeate. *Stipules* ovate, amplexicaul, ciliate, smoothish, or sometimes hirsute. *Flowers* in slender loose racemose clusters; bracts hirsute; common peduncles glandular-hispid. *Perianth* mostly 4-parted, purple, the margins of the segments pale red. *Stamens* 6. *Styles* 2. *Seed* subcompressed, lenticular-ovate, smooth, brown.

Hab. Swampy low grounds, along rivulets: common. *Fl.* August. *Fr.* September.

Obs. This and the preceding commonly grow together, forming large entangled bunches; and are a couple of worthless and often troublesome plants, in swampy meadows.

* * *Stem not aculeate.*

13. P. SCANDENS, *L.* Stem volubile, subterete, smooth; leaves broadish-cordate, acuminate; flowers rather large, in erect axillary racemes; perianth-segments winged; wings decurrent on the pedicels. *Beck, Bot. p.* 303.

CLIMBING POLYGONUM. *Vulgò*—American climbing Buckwheat.

Root annual. *Stem* 8 to 10 or 12 feet long, twining and climbing, branching, subterete, or obscurely angular, smoothish, often purple. *Leaves* 2 to 3 inches long, and an inch and half to 2 and a half inches wide, the nerves and margins somewhat scabrous; *petioles* 1 to 2 inches long, sulcate-angled, roughish. *Stipules* short, smooth, nerved, somewhat toothed at summit. *Flowers* fasciculate, in long axillary interrupted racemes; *pedicels* slender, articulated below the middle. *Perianth* greenish; *segments* edged with white, sometimes tinged with purple,—when in fruit 3 of them conspicuously winged on the keel, over the angles of the seed, with the wings decurrent on the pedicel nearly to the articulation. *Seed* unequally triquetrous, rather acute at each end, smooth and shining, purplish black when mature.

Hab. Moist thickets, twining round bushes, &c. frequent. *Fl.* Aug. *Fr.* Sept.—Oct.

14. P. CONVOLVULUS, *L.* Stem volubile, striate-angled, somewhat scabrous; leaves oblong, subhastate-cordate, acuminate; flowers in slender terminal and axillary racemes; perianth-segments keeled, without wings. *Beck, Bot. p.* 303.

BIND-WEED POLYGONUM. *Vulgò*—Wild Buckwheat. Black Bindweed.

Root annual. *Stem* 2 or 3 to 6 feet long, procumbent, or twining round other plants, branching, sulcate-striate, minutely scabrous on the ridges. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to an inch and half wide, the lobes at base often a little spreading, or somewhat hastate. *Stipules* smoothish, nerved. *Flowers* smaller than in the preceding, in slender interrupted leafy racemes; *pedicels* slender, shorter than in the preceding, articulated rather above the middle. *Perianth* roughish-puberulent, green; segments edged with white, or tinged with purple, keeled, sometimes slightly winged, but generally without wings. *Seed* nearly equally triquetrous, roughish-punctate, purplish black when mature.

Hab. Cultivated grounds, wheat fields, &c. frequent. *Fl.* July. *Fr.* September.

Obs. This is an introduced plant, and has much general resemblance to the preceding; but the two species may be readily distinguished by the perianth.

15. P. FAGOPYRUM, L. *Stem erect, paniculately branching, sulcate-angled, smoothish; leaves cordate-sagittate, acute; racemes terminal*

and axillary ; seed equally triquetrous, nearly naked. Beck, Bot. p. 303.

Vulgò—*Buckwheat.*

Gall. *Bléd Sarrasin.* Germ. *Der Buchweitzen.* Hisp. *Trigo Sarraceno.*

Root *annual.* Stem 2 *to* 4 *feet high, much branched, angular and sulcate-striate, pubescent near the joints, becoming dark purple.* Leaves 2 *to* 3 *or* 4 *inches long, and* 1 *to* 2 *inches wide, often a little hastate at base ;* petioles 1 *to* 2 *or* 3 *inches long.* Stipules *short, smooth.* Flowers *in somewhat paniculate racemes, fascicles rather crowded ;* pedicels *slender, longish, obscurely articulated above the middle.* Perianth *mostly white, with tinges of green and pale purple.* Seed *equally and acutely triquetrous, somewhat acuminate, much longer than the perianth, smooth, dark brown when mature, often striately clouded.*

Hab. *Fields : frequent.* Fl. *August.* Fr. *September—October.*

Obs. *The grain of this affords a favorite article of food ; and it is much cultivated in some districts,—particularly those which are rough and hilly. It is considered a severe crop upon the soil, and is rarely sown on highly improved land ; but it is admirably adapted to subdue new, or wild lands. The flowers are a favorite resort of the honey-bee. Eight or ten additional species are enumerated in the U. States.*

CLASS IX. ENNEANDRIA.

Order 1. Monogynia.

202. LAURUS. *L. Nutt. Gen.* 374.

[The ancient Latin name for the Bay tree: Etymology obscure.]

Sub-genus EUOSMUS. *Nutt. l. c.* DIOICOUSLY POLYGAMOUS: *Perianth* colored or corolla-like, 6-parted. *Fertile stamens* 9, arranged in a double series; the 6 outer ones with simple distinct filaments; the 3 inner ones with triple connate filaments at base,—the lateral or accessory ones short, bearing abortive gland-like anthers. *Ovary* superior. *Drupe* 1-seeded.

Trees, or Shrubs : leaves alternate, entire, or lobed, deciduous; flowers in lateral conglomerate umbels, or terminal bracteate corymbose racemes, sometimes appearing before the leaves. *Nat. Ord.* 21. *Lindl.* LAURINEÆ.

1. L. BENZOIN, *L.* Leaves lance-obovate, entire; flowers in lateral umbellate clusters, preceding the leaves, often dioicous; buds and pedicels smooth. *Beck, Bot. p.* 305.

L. pseudo-benzoin. *Mx. Am.* 1. *p.* 243.

Vulgò—Spice-wood. Wild All-spice. Fever bush. Benjamin tree.

Stem 6 to 8 or 10 feet high, branched; branches virgate, brittle. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, varying from lance-oval to obovate, mostly acute, or with a short acumination (sometimes obtuse and rounded at apex), often cuneate at base, mostly smooth, pale or somewhat glaucous beneath; *petioles* about half an inch long. *Flowers* in clusters of 3 to 5 from a bud, on pedicels about 2 lines long; flower-buds distinct from the leaf-buds. *Perianth* greenish yellow; segments obovate-oblong, obtuse. *Stamens* rather shorter than the perianth; the filaments of the inner series dilated at base, trifid, with the lateral segments short, bearing 2-lobed (or sometimes peltate) glands, instead of anthers; *perfect anthers* 2-celled; each cell opening by a vertical elastic valve, which is detached at the

lower end and reflected upwards. *Ovary* subglobose; *style* short, thick. *Drupe* oval, dark purple when mature.

Hab. Moist low grounds; borders of rich woodlands: frequent. *Fl.* April. *Fr.* Sept.

Obs. An aromatic stimulant. A decoction of the branches is often used as a medicinal drink for horned cattle, in the spring of the year.

2. L. Sassafras, *L.* Leaves of two forms, ovate and entire, or lobed, and cuneate at base; flowers in terminal clustered corymbose racemes with lance-linear villose bracts, dioicous by abortion; buds and pedicels silky-pubescent. *Beck, Bot. p.* 305. Icon, *Mx. f. Sylva.* 2. *tab.* 81. *Vulgò*—Sassafras.

Stem 15 to 30 or 40 feet high, and 6 to 12 inches (sometimes, though rarely, near 2 feet) in diameter at base, branching; young branches yellowish green, and pubescent. *Leaves* 3 to 5 inches long, and 2 to 4 inches wide, often ovate and entire, but more commonly dilated and 3-lobed at apex, and acute at base (sometimes oval with a lateral lobe), silky-pubescent when young, finally smooth; *petioles* half an inch to near an inch long. *Flowers* in terminal clustered racemes, from the same buds and contemporaneous with the leaves, on villose pedicels 1 fourth to half an inch long; *bracts* villose, as long as the pedicels. *Perianth* pale greenish yellow; segments oblong, rather obtuse. *Sterile flower* with 9 perfect *stamens*, the 3 inner ones with each a large subsessile gland-like abortive anther on each side of its base; *ovary* abortive. *Fertile flower* with only a single series of 6 short abortive *stamens*; *ovary* ovoid, acuminate; *stigma* capitate, depressed, on a *style* as long as the ovary; (*stigma* nearly sessile, *Torr*). *Drupe* ovoid-oblong, dark blue when mature; *pedicels* purple, thickened, clavate.

Hab. Woodlands; fence-rows, &c. frequent. *Fl.* April. *Fr.* September.

Obs. This is a powerful aromatic stimulant, and possesses valuable medical properties;—for an account of which, as well as of those of the preceding species, See *Dr. Brockenbrough's Inaugural Thesis*, 1804, *Philad.* Five or six additional species are enumerated in the U. States.

Order 2. Trigynia.

203. RHEUM. *L. Gen. Pl.* 692.

[From *Rha*, the ancient name of the river Volga; its native region.]

Perianth colored or corolla-like, narrowed at base, 6-parted, persistent. *Ovary* superior, triquetrous; *styles* short; *stigmas* multifid, reflexed. *Seed* solitary, triquetrous, the angles membranaceously margined.

Herbaceous: leaves alternate, the petioles connected at base with sheathing stipules; flowers fasciculate, in racemose panicles. *Nat. Ord.* 156. *Lindl.* Polygoneæ.

1. R. rhaponticum, Ait. *Leaves cordate-ovate, rather obtuse, the sinus at base dilated; petioles channelled above, rounded at the edge.* Willd. Sp. 2. p. 488.

Rhapontic Rheum. Vulgò—*Rhubarb. Pie Rhubarb.*

Root *perennial, large, reddish brown, yellow within. Stem* 3 *to* 4 *feet high, stout, jointed, striate-sulcate, smoothish, fistular, paniculately branched at summit.* Radical leaves *becoming very large* (18 *inches to* 2 *feet long, and* 12 *to* 18 *inches wide*), *smoothish above, pubescent on the veins beneath;* petioles *thick, and succulent,* 4 *to* 6 *or* 8 *inches long, channelled on the upper side;* stem leaves *gradually smaller above, on shorter petioles.* Stipules *large, membranaceous, sheathing.*

Flowers *in large terminal racemose panicles;* pedicels *fasciculate, slender, 1 third to half an inch long, articulated near the middle.* Perianth *greenish; segments with white margins, the alternate ones narrower.* Ovary *triquetrous;* stigmas *large, multifid, reflexed, on very short slender styles.*

Hab. *Gardens: frequent.* Fl. *May.* Fr. *July—Aug.*

Obs. *This is frequently cultivated for the sake of its succulent acid* petioles,—*which are used by the pastry cook in making tarts, in the spring of the year, when fruit is scarce. It is the only species known in the U. States.*

CLASS X. DECANDRIA.

Order 1. Monogynia.

A. Ovary inferior: *Corolla monopetalous.*

204. VACCINIUM. *L. Nutt. Gen.* 379.
[An ancient Classical name; of obscure Etymology.]

Calyx adnate to the ovary, with the limb mostly 5-toothed. *Corolla* campanulate, or urceolate, mostly 5-cleft. *Stamens* inserted on the ovary. *Berry* globose, 4 or 5-celled, many-seeded, crowned with the persistent calyx-teeth.

Shrubs: leaves simple, alternate, subcoriaceous; bud-scales often persistent; flowers pedicellate, axillary, solitary, racemose, or fasciculate. *Nat. Ord.* 172. *Lindl.* Vaccinieæ.,

* *Corolla campanulate.*

1. V. stamineum, *L.* Young branches pubescent; leaves lance-oval, acute, glaucous beneath; pedicels solitary, axillary, filiform, nodding; corolla spreading-campanulate, lobes ovate, obtuse; anthers exserted, each with 2 subulate awns near the base. *Beck, Bot. p.* 223. V. album. *Florul. Cestr. p.* 50. Also? *Marsh. Arbust. p.* 157. *Willd. Sp.* 2. *p.* 350. *Pers. Syn.* 1. *p.* 479. *Muhl. Catal. p.* 39. *Pursh, Am.* 1. *p.* 285. *Nutt. Gen.* 1. *p.* 263. *Lindl. Ency. p.* 320. *Also?* V. frondosum. *Marsh. Arbust. p.* 158. Not of *Linn.* nor *Mx.*

Stamineous Vaccinium. *Vulgò*—Squaw Huckleberry. Deerberry.

Stem 2 to 3 feet high, diffusely branching, the young branches pubescent. *Leaves* an inch to 2 inches and a half long, and 3 fourths of an inch to an inch wide, mostly acute, entire, pubescent and ciliate when young, often bluish glaucous beneath, at length smoothish, on very short petioles. *Flowers* mostly on slender pubescent lateral branches 2 to 3 inches in length, which are clothed with small leaves, and look like leafy racemes; *pedicels* axillary, naked, about 3 fourths of an inch long. *Calyx-segments* short, acute, ciliate at apex. *Corolla* white, spreading; lobes ovate, mostly rounded at apex. *Stamens* erect, conspicuous; *filaments* short, pubescent; *anthers* adnate to the filaments, each with 2 subulate spreading processes at the back, and terminating in 2 long slender parallel tubes, which are open and toothed at summit. *Style* longer than the stamens; *stigma* simple. *Berries* large (often near half an inch in diameter), mostly globose (somewhat pyriform, *Authors*), pale green, or sometimes purplish, when mature, of a mawkish bitterish taste, and scarcely esculent.

Hab. Moist woodlands: frequent. *Fl.* May—June. *Fr.* August.

Obs. Judging from *Marshall's* description, I should think this was the plant intended by his V. *frondosum*,—although he also gives a V. *stamineum.*

2. V. FRONDOSUM, *L.* Leaves obovate-oblong, or rhomboid-oval, rather obtuse, sprinkled with yellow resinous atoms beneath; racemes loose, bracteate; pedicels long, slender, mostly bracteolate near the middle; corolla ovoid-campanulate; anthers included, naked at base. *Beck, Bot. p.* 223. Not of *Marsh.* nor *Mx.*
V. glaucum. *Mx. Am.* 1. *p.* 231.

LEAFY VACCINIUM. *Vulgò*—Blue Huckleberry. Blue-tangles.

Stem 3 to 5 feet high, branching, branches rather slender, when young smoothish, sprinkled with resinous dots (pubescent, *Ell.*). *Leaves* 1 to 3 inches long, and half an inch to an inch wide, tapering at each end, but rather obtuse at apex, often lance-oval inclining to rhomboid, or cuneate at base, very entire and slightly revolute on the margin, minutely pubescent and of a dull glaucous color beneath, with prominent reticulated veins, on very short petioles. *Racemes* lateral, short, loose, few-flowered; *pedicels* half an inch to an inch long, each mostly with a small spatulate-obovate ciliate bract at base, and 2 minute subulate sub-opposite bracts near the middle; bracts dotted with resinous atoms. *Corolla* white, tinged with red, a little contracted at the orifice. *Stamens* scarcely as long as the corolla; *anthers* destitute of subulate processes at base. *Style* a little longer than the stamens. *Berries* rather large, globose, dark blue and glaucous-pulverulent when mature.

Hab. Low, moist woodlands, and thickets: not common. *Fl.* May. *Fr.* July.

Obs. This species produces the most agreeable fruit of any of our Vacciniums; but it is, at the same time, the least common, in this County.

* * *Corolla urceolate.*

3. V. RESINOSUM, *Ait.* Leaves oblong-oval, mostly obtuse, petiolate, covered with resinous atoms and blotches beneath; racemes rather crowded and secund, bracteate; pedicels short; corolla tubular, ovoid-conic, 5-angled. *Beck, Bot. p.* 223.

RESINOUS VACCINIUM. *Vulgò*—Black Huckleberry.

Stem 18 inches to 3 feet high, much branched; branches rather erect, pubescent when young. *Leaves* 1 to 3 inches long, and half an inch to an inch wide, mostly obtuse, sometimes rather acute, varying from lance-oval to obovate, very entire, pubescent and ciliate when young, thickly covered with atoms and flat shining patches, or spots, of yellow resinous matter beneath, on short but distinct petioles. *Racemes* lateral, numerous, short, with the flowers crowded; *pedicels* 1 to 3 lines in length, with very small lanceolate bracts at or near the base. *Corolla* mostly purple, with tinges of pale yellowish green, dotted with resinous atoms, contracted at the orifice, apex of the lobes recurved. *Stamens* shorter than the corolla (exserted, *Ell.*); *filaments* smooth; *anthers* naked at base, with the terminal tubes imperfect, opening laterally and becoming flat linear acute membranes at summit. *Style* scarcely exserted; *stigma* capitate. *Berries* depressed-globose, smaller than the preceding, black and shining when mature.

Hab. Dry woodlands; Mica-slate hills: frequent. *Fl.* May. *Fr.* July—August.

Obs. The fruit of this is very pleasant to the taste; but it is not so much esteemed as the preceding, on account of its larger seeds.

4. V. CORYMBOSUM, *L.* Flower-bearing branches nearly leafless; leaves oval, or inclining to obovate, mostly acute at each end, mucronate, pubescent when young; racemes short, sessile, subcorymbose, bracteate; corolla tubular, ovoid-cylindric. *Beck, Bot. p.* 224.

V. disomorphum. *Mx. Am.* 1. *p.* 231. Also? *Bigel. Bost. p.* 151.

V. fuscatum. *Ait. Kew.* 2. *p.* 356. Also? *Willd. Sp.* 2. *p.* 351. *Pers. Syn.* 1. *p.* 479. *Muhl. Catal. p.* 39. *Pursh, Am.* 1. *p.* 287. *Nutt. Gen.* 1. *p.* 263. *Ell. Sk.* 1. *p.* 499. *Torr. Fl.* 1. *p.* 416. *Ejusd. Comp. p.* 180. *Lindl. Ency. p.* 320.

Also? V. amœnum. *Willd. Sp.* 2. *p.* 353. *Ait. Kew.* 2. *p.* 358. *Pursh, l. c. Nutt. l. c. Lindl. Ency. p.* 322.

Corymbose Vaccinium. *Vulgò*—Swamp, or Tall Huckleberry.

Stem 5 to 8 or 10 feet high, often stout, with irregular straggling branches; the young leafing branches pubescent, the flower bearing ones somewhat angular and verrucose. *Leaves* 1 to 2 or 2 and a half inches long, and 3 fourths of an inch to an inch and quarter wide, generally elliptic, sometimes obovate and obtuse, always mucronate by a short obtuse projection of the midrib at apex, entire, pubescent when young, particularly on the midrib and nerves, at length smoothish, destitute of resinous dots, acid to the taste, on short pubescent petioles. *Racemes* from lateral buds, unaccompanied with leaves; *pedicels* 1 fourth to 1 third of an inch long, with purplish bracts somewhat resembling bud-scales at base. *Corolla* white, mostly tinged with purple, larger than the preceding (1 third to half an inch long), nearly cylindrical, contracted at the orifice; lobes short, tooth-like. *Stamens* included; *filaments* pubescent, nearly as long as the anthers; *anthers* naked and free at base, the terminal tubes opening laterally and becoming flat linear acute membranes. *Style* longer than the stamens, but scarcely as long as the corolla (exserted, *Torr.*), somewhat persistent; *stigma* capitate, glandular. *Berries* rather large (often 1 third of an inch in diameter), purplish black when mature, sub-acid. *Seeds* rugose-punctate, or rough with reticulated ridges and depressions.

Hab. Shaded swamps, and rivulets: frequent. *Fl.* May. *Fr.* July.

Obs. This is often a stout shrub; but appears to be subject to some *varieties*,—which probably have been described as distinct species, under the names here quoted as synonyms.

5. V. pennsylvanicum, *Lam.* Branches angular, yellowish green, the flower-bearing ones elongated, mostly leafless; leaves subsessile, lance-oval, mucronate, often slightly serrulate, smooth and shining on both surfaces; racemes sessile, numerous, rather crowded, subfasciculate, bracteate; corolla tubular, ovoid. *Beck, Bot. p.* 224. Not of *Marsh.*

V. virgatum. *Willd. Sp.* 2. *p.* 353. *Ait. Kew.* 2. *p.* 358. *Muhl. Catal. p.* 40. *Nutt? Gen.* 1. *p.* 263. *Ell? Sk.* 1. *p.* 498. *Bigel. Bost. p.* 152. *Lindl. Ency. p.* 322. Also, *Pers. Syn.* 1. *p.* 479. *Eat. Man. p.* 381. Not of *Pursh.*

V. tenellum. *Pursh, Am.* 1. *p.* 288. *Bart. Phil.* 1. *p.* 197. Also, *Nutt. l. c. Ell. Sk.* 1. *p.* 500. *Lindl. l. c.* Not of *Willd. Ait. Pers. Muhl. Bigel. Torr.* nor *Eat.*

Pennsylvanian Vaccinium. *Vulgò*—Sugar Huckleberry.

Stem 1 to 2 feet high, much branched; branches more or less angular, with a green verrucose bark. *Leaves* an inch to an inch and half long, and half an inch to 3 quarters wide, elliptic, and mostly acute at each end, sometimes obovate and obtuse, mucronate, entire, or obsoletely serrulate, rather thin and membranaceous, very smooth, with reticulated pellucid veins, nearly sessile. *Racemes* 4 to 8-flowered, terminal and lateral, numerous, from buds without leaves, and often on

leafless branches; *pedicels* 1 to 3 or 4 lines long, with small lanceolate bracts at or near the base. *Calyx-teeth* somewhat spreading, becoming longer and more acute on the fruit. *Corolla* pale red, or greenish white tinged with red, ovoid-oblong, smaller than in the preceding species. *Stamens* included; *filaments* flat, ciliate-pubescent on the margins; *anthers* naked at base, the terminal tubes partially opening laterally. *Style* scarcely, or a very little, exserted; *stigma* capitate. *Berries* middle-sized, bluish-black and a little glaucous when mature, sweet.

Hab. Hilly woodlands, and thickets: frequent. *Fl.* May. *Fr.* July.

Obs. The fruit of this is very pleasant,—and is produced in large quantities. It was overlooked, or not distinguished from the others, when my Catalogue was prepared. Some 18 or 20 additional species have been enumerated in the U. States; but on a careful examination the number will probably be somewhat reduced.

B. Ovary superior. †*Corolla monopetalous.*

205. GAULTHERIA. *L. Nutt. Gen.* 378.

[Dedicated to M. *Gaulthier;* a French Physician and Botanist, of Canada.]

Calyx 5-cleft, with 2 *bracts* at base. *Corolla* tubular, ovoid, 5-cleft; lobes small, revolute. *Filaments* hirsute. *Receptacle* 10-toothed. *Capsule* 5-celled, many-seeded, covered by the calyx, which finally becomes thick and succulent, resembling a *berry*.

Frutescent: leaves alternate, coriaceous, sempervirent; flowers axillary, solitary, pedunculate. *Nut. Ord.* 170. *Lindl.* Ericeæ.

1. G. procumbens, *L.* Stem procumbent, creeping, with the branches erect; leaves obovate, cuneate at base, serrate-denticulate, crowded near the summit of the branches; flowers few, subterminal, nodding. *Beck, Bot. p.* 216.

Procumbent Gaultheria. *Vulgò*—Tea-berry. Spicy Winter-green.

Stem creeping, root-like; branches erect, simple, 3 to 5 inches high, naked below, or with a few small lance-ovate scales, pubescent and leafy at summit. *Leaves* few (4 to 6), an inch to an inch and a half long, and near an inch wide, obovate, or oval, somewhat mucronate, the margin a little revolute, remotely serrulate, serratures mucronate, or pointed with deciduous awns; *petiole* very short, and, with the midrib above, pubescent. *Flowers* few (1 to 3 or 4), in the axils of the crowded upper leaves, nodding, on recurved pubescent peduncles 1 fourth to half an inch long. *Calyx* double, or with 2 small roundish-ovate persistent bracts at base, resembling an exterior calyx; segments ovate, ciliate. *Corolla* white, ovoid-oblong, obtusely 5-angled, contracted at the orifice, hairy within. *Stamens* included; *filaments* broadish, incurved, hairy, alternating with the teeth of the receptacle; *anthers* large, terminating in 2 tubes, each tube recurved and bifid, with the points acute. *Ovary* orbicular, depressed, torulose; *style* cylindric, rather longer than the stamens, persistent. *Capsule* depressed-globose, umbilicate, embraced by the persistent calyx,—which becomes enlarged, thickened, succulent and berry-like, bright red when mature, persistent.

Hab. Woodlands; West-Chester; Brandywine hills: not common. *Fl.* July. *Fr.* Oct.

Obs. The whole plant is pleasantly aromatic; and is often employed by the apothecaries to give a flavor to their syrups and popular diet drinks. Two other species have been enumerated in the U. States; but it seems to be doubtful whether they really belong to the genus.

206. EPIGÆA. *L. Nutt. Gen.* 385.

[Greek, *Epi*, upon, and *Ge*, the earth; in allusion to its prostrate habit.]

Calyx 5-parted, with 3 *bracts* at base. *Corolla* tubular, salverform; limb 5-parted, spreading; tube villose within. *Capsule* 5-celled.

A suffruticose trailing evergreen: leaves alternate; flowers in dense fasciculate racemes, axillary and terminal. *Nat. Ord.* 170. *Lindl.* ERICEÆ.

1. E. REPENS, *L.* Branches, petioles, and nerves of the leaves hirsute; leaves cordate-oblong, entire, on long petioles; tube of the corolla cylindrical. *Beck, Bot. p.* 219.

CREEPING EPIGÆA. *Vulgò*—Ground Laurel. Trailing Arbutus.

Stem prostrate, 6 to 12 or 15 inches long, branching, woody, hirsute with tawny or ferruginous hairs. *Leaves* 1 to 2 and a half inches long, and 3 fourths of an inch to an inch and half wide, mostly rather acute, sometimes obtuse and rounded at apex, shortly mucronate, reticulately veined, sprinkled and fringed with coarse hairs; *petioles* half an inch to an inch long. *Flowers* very fragrant, in small dense fasciculate racemes, on hirsute peduncles; *pedicels* 1 or 2 lines long, with 3 unequal lance-ovate hirsute persistent bracts at base. *Calyx* colored, 5-parted; segments lance-oval, acuminate. *Corolla* pale red, or reddish white; tube 1 third to near half an inch long; lobes ovate, obtuse. *Stamens* shorter than the corolla; *filaments* hairy. *Style* a little longer than the stamens, smooth; *stigma* subclavate, trifid? (simple, *Torr.*). *Capsule* depressed-globose, 5-angled.

Hab. Hilly woodlands, of northern exposure: frequent. *Fl.* April. *Fr.*

Obs. This plant has been supposed to be injurious to cattle, when eaten by them; but whether correctly, or not, seems undetermined. It is the only species of the genus in the U. States.

207. ANDROMEDA. *L. Nutt. Gen.* 380.

[So named, in allusion to the exposure of *Andromeda;* from their place of growth.]

Calyx 5-parted, persistent. *Corolla* tubular, subcylindric, or ovoid; limb 5-cleft, reflexed. *Anthers* awned, or awnless. *Capsule* 5-celled, 5-valved; valves producing dissepiments from the middle.

Shrubs: leaves mostly alternate; flowers terminal and axillary, racemose, or fasciculate. *Nat. Ord.* 170. *Lindl.* ERICEÆ.

1. A. RACEMOSA, *Mx.* Leaves oval-lanceolate, acute, serrulate, thin and rather membranaceous, somewhat pubescent beneath; racemes terminal, naked, secund, mostly simple; calyx bibracteate at base; corolla subcylindric; anthers 4-awned at summit. *Beck, Bot. p.* 217. Not? of *Linn. Willd.* and *Ait.*

A. Catesbæi. *Willd. Sp.* 2. *p.* 613 (excl. syn. *Walt.*). *Ait. Kew.* 3. *p.* 54.

RACEMOSE ANDROMEDA.

Stem 3 to 5 feet high, with slender irregular straggling branches, and a cinereous exfoliating bark. *Leaves* an inch and half to 3 inches long, and 3 fourths of an inch to an inch and half wide, mucronate, mostly rather obtuse at base, smooth above, pubescent on the midrib and nerves beneath; *petioles* about a line in length. *Racemes* numerous, 2 to 3 or 4 inches long, terminal on short spreading branches, leafless, simple (rarely compound, or branched); *flowers* nodding, or secund on the under side, on short thickish pedicels. *Calyx* purple; segments

short, lance-ovate, acute, minutely ciliate; *bracts* 2, at the base of the calyx, ovate, acuminate, purplish. *Corolla* white (flower-buds purple before they expand), nearly cylindric, about 1 third of an inch long, the limb with small revolute lobes. *Stamens* about half the length of the corolla; *filaments* flat, smooth; *anthers* with 2 tubular lobes at summit, each lobe terminating in 2 acute rigid awns. *Ovary* depressed-globose; *style* cylindric, a little exserted; *stigma* simple. *Capsule* small, depressed-globose, umbilicate, dark purplish brown, the sutures closed by 5 narrow ferruginous slightly convex ribs.

Hab. Moist thickets; E. Marlborough; Great Valley: not common. *Fl.* June. *Fr.*

Obs. This pretty species was collected by Mr. SAMUEL PEIRCE, in swampy thickets near his residence; and also by Mr. JOSEPH JACOBS, near the foot of the Valley hill, north of the Ship tavern.

2. A. MARIANA, *L.* Leaves oval, mostly acute at each end, very entire, subcoriaceous, paler and puncticulate beneath; flowering branches nearly naked; pedicels fasciculate, bracteate; calyx naked at base; corolla ovoid-cylindric; anthers awnless at summit. *Beck, Bot. p.* 217.

MARYLAND ANDROMEDA. *Vulgò*—Stagger-bush.

Stem 2 to 3 or 4 feet high, with erect branches, and a cinereous bark, sprinkled with numerous small black dots. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, rarely obtuse, shortly and bluntly mucronate, entire and slightly revolute on the margin, smooth above, the under surface sprinkled with small brown dots, and pubescent on the nerves and veins; *petioles* about 1 fourth of an inch long. *Flowers* in short sessile fasciculate racemes on the old branches, from terminal and lateral buds, unaccompanied with leaves; *pedicels* about half an inch long (of the fruit near an inch), with ovate bracts, like bud-scales, at base. *Calyx* green, deeply 5-parted; segments lanceolate, acute, half as long as the corolla. *Corolla* white, or reddish white, large (about half an inch long). *Stamens* included (sometimes wanting?); *filaments* flat, lanceolate, hairy, recurvedly doubled below the anthers; *anthers* terminating in 2 short awnless tubes opening laterally at summit, and with 2 minute white decurrent diverging awns at base. *Ovary* conical, 5-angled; *style* tapering, rather shorter than the corolla; *stigma* somewhat lobed. *Capsule* pentangular-ovoid, or somewhat urceolate, with the apex truncate, about as long as the calyx-segments, brown, the sutures closed externally by 5 whitish convex ribs. *Seeds* numerous, small, clavate, truncate at summit, pale tawny, or straw color.

Hab. Hilly woodlands; Londongrove; Valley Hill: rare. *Fl.* June. *Fr.* Aug. Sept.

Obs. Found by Dr. E. MICHENER, near West Grove Meeting House,—and also by D. TOWNSEND, Esq. on the Valley hill, north of the Ship tavern. It is very abundant in New-Jersey;—where the farmers are of opinion it is destructive to sheep, when eaten by them,—producing a disease called the *staggers*.

3. A. LIGUSTRINA, *Muhl.* Leaves obovate-lanceolate, and lance-oblong, acuminate, obsoletely serrulate; flower-bearing branches terminal, paniculate, naked; pedicels mostly without bracts; corolla subglobose, pubescent; anthers awnless. *Beck, Bot. p.* 218.

A. paniculata. *Marsh. Arbust. p.* 7. *Willd. Sp.* 2. *p.* 612 (excl. syn. *Linn.*). *Mx. Am.* 1. *p.* 254. *Pers. Syn.* 1. *p.* 481. *Ait. Kew.* 3. *p.* 53. *Pursh, Am.* 1. *p.* 295. *Bart. Phil.* 1. *p.* 198. *Bigel. Bost. p.* 167. *Lindl. Ency. p.* 360. *Eat. Man. p.* 17. Not of *Linn.*

Vaccinium ligustrinum. *L.* Also, *Willd. Sp.* 2. *p.* 352. *Pers. Syn.* 1. *p.* 479. Not of *Marsh. Mx. Pursh, Nutt? Lindl.* nor *Eat.*

Lyonia paniculata. *Nutt. Gen.* 1. *p.* 266.

Ligustrum, or Privet-like Andromeda. *Vulgò*—Pepper-bush.

Stem 3 to 6 or 8 feet high, with numerous rather erect branches, and a cinereous exfoliating bark. *Leaves* 1 to 2 and a half inches long, and half an inch to near an inch wide, generally inclining to obovate, but often lance-oblong, or oval, acuminate, tapering and acute at base, obscurely serrulate, pubescent with short hairs, smoothish above when old, and rather coriaceous (membranaceous, *Torr.*); *petioles* 1 to 3 lines long. *Racemes* half an inch to an inch and half long, pubescent, often a little compound, arranged paniculately on the terminal branches of the preceding year, mostly naked, sometimes 1 or 2 small leaves near the base of the racemes; *pedicels* 1 fourth to 1 third of an inch long, often in fascicles of 2 to 5; *bracts* 0, or very small. *Calyx* colored, pubescent with short white hairs; segments short, ovate, acute. *Corolla* white, small, roundish-ovoid, slightly urceolate, smooth within, externally pubescent. *Stamens* shorter than the corolla; *filaments* flat, a little dilated at base, ciliate; *anthers* terminating in 2 very short awnless tubes opening laterally at summit. *Ovary* depressed-globose, hirsute at summit; *style* thick, shorter than the corolla; *stigma* simple. *Capsule* roundish-ovoid, pentangular, obtuse, slightly umbilicate, hairy, rugose-veined, dark brown, the sutures closed by 5 palish tawny convex ribs. *Seeds* numerous, small, oblong, acute at base, tawny.

Hab. Moist woodlands, and thickets: frequent. *Fl.* June. *Fr.* September.

Obs. Fifteen or sixteen additional species are enumerated in the U. States.

208. KALMIA. *L. Nutt. Gen.* 382.

[Named in honor of *Peter Kalm*; a Swedish Botanist.]

Calyx 5-parted. *Corolla* somewhat salverform; the limb 5-lobed, producing 10 cornute protuberances beneath, in the cavities of which the anthers are concealed. *Capsule* 5-celled, 5 valved; dissepiments marginal. *Seeds* numerous.

Shrubs: leaves scattered, sub-opposite, or ternately verticillate, entire, coriaceous and sempervirent; flowers in racemose corymbs. *Nat. Ord.* 170. *Lindl.* Ericeæ.

1. K. latifolia, *L.* Leaves scattered, and ternate, oval-lanceolate, acute at each end, green on both sides; corymbs terminal, viscidly pubescent; flowers large. *Beck, Bot. p.* 219. Icon, *Mx. f. Sylva.* 2. *tab.* 68.

Broad-leaved Kalmia. *Vulgò*—Laurel. Calico-bush.

Stem 3 or 4 to 8 or 10 feet high, with irregular crooked straggling branches. *Leaves* 2 to 3 inches long, and about an inch wide, scattered, opposite, or ternate, thick and coriaceous, smooth and shining, paler green beneath, on petioles 1 fourth to 3 fourths of an inch long. *Flowers* in terminal spreading corymbs; *pedicels* about an inch long, slender, viscid-pubescent, with 3 *bracts* at base, the two lateral ones short and ovate, the lower one longer and lanceolate. *Calyx-segments* ovate-oblong, acute. *Corolla* pale red, or rose color (sometimes white); tube short; limb spreading (about 3 fourths of an inch in diameter), with an erect 5-cleft margin. *Stamens* declinate; the *anthers* lodged in the lateral cavities of the corolla, but at length liberated, and springing elastically towards the stigma. *Style* longer than

the corolla, a little declined and clavate, persistent; *stigma* obtuse. *Capsule* depressed-globose, hirsute. *Seeds* very small, oblong, pale straw-color.

Hab. Shaded, rocky hills; Brandywine, &c. frequent. *Fl.* May—June. *Fr.* Sept.

Obs. The *wood* of this splendid flowering shrub is very hard, and is often used to make handles for small mechanical implements. The plant possesses medical properties; and a decoction of the leaves is sometimes used as a wash, for cutaneous diseases.

2. K. ANGUSTIFOLIA, *L.* Leaves ternate, and opposite, linear-elliptic, obtuse, slightly ferruginous beneath; corymbs lateral, verticillate; flowers small. *Beck, Bot. p.* 219.

NARROW-LEAVED KALMIA. *Vulgò*—Sheep Laurel. Dwarf Laurel.

Stem about 2 feet high, slender, somewhat branching. *Leaves* 1 to 2 inches long, and about half an inch wide, generally obtuse, sometimes rather acute, on petioles 1 third to half an inch long. *Flowers* in small lateral puberulent corymbs, in the axils of the ternate leaves, and thus appearing verticillate; *pedicels* filiform, 1 third to 2 thirds of an inch long, with 3 unequal lanceolate acuminate *bracts* at base. *Corolla* bright deep purple; tube very short; limb about 1 third of an inch in diameter; lobes broad-ovate, slightly acuminate. [*Capsule* smooth. *Torr.*]

Hab. Great Valley; W. Trimble's, and R. Thomas's lands: rare. *Fl.* June, July. *Fr.*

Obs. This pretty little species was first collected here by Mr. JOSEPH JACOBS. It is thought to be poisonous to Sheep, and other stock, when eaten by them. Three other species are enumerated in the U. States.

209. RHODODENDRON. *L. Nutt. Gen.* 383.

[Gr. *Rhodon*, a rose, and *Dendron*, a tree; the flowers being in rose-colored clusters.]

Calyx 5-parted, persistent. *Corolla* somewhat funnel-form, or campanulate; limb 5-cleft, unequal. *Stamens* 5 to 10, declinate; *anthers* opening by 2 terminal pores. *Capsule* 5-celled, 5-valved, opening at summit.

Shrubs: leaves alternate, entire, deciduous, or sempervirent; flowers mostly in terminal corymbose clusters. *Nat. Ord.* 170. *Lindl.* ERICEÆ.

* *Flowers Pentandrous: leaves deciduous.*

1. R. NUDIFLORUM, *Torr.* Leaves lance-oblong, and obovate-lanceolate; flowers rather naked, slightly viscid; tube of the corolla longer than the lobes; stamens much exserted. *Beck, Bot. p.* 220.
Azalea nudiflora. *Marsh. Arbust. p.* 15. *Willd. Sp.* 1. *p.* 831. *Pers. Syn.* 1. p. 212. *Ait. Kew.* 1. *p.* 319. *Muhl. Catal. p.* 20. *Nutt. Gen.* 1. *p.* 135. *Bart. Phil.* 1. *p.* 113. *Ell. Sk.* 1. *p.* 240. *Bigel. Bost. p.* 82. *Florul. Cestr. p.* 26. *Lindl. Ency. p.* 144. *Eat. Man. p.* 48. A. periclymenoides. *Mx. Am.* 1. *p.* 151. *Pursh, Am.* 1. *p.* 152.

NAKED-FLOWERED RHODODENDRON. *Vulgò*—Wild Honeysuckle.

Stem 2 to 4 or 6 feet high, much branched towards the summit; young branches hairy. *Leaves* 2 to 3 inches long, and about an inch wide, crowded at the extremities of the branches, entire, upper surface sprinkled with bristly appressed hairs, which are numerous along the margin, pubescent beneath; *petioles* 1 fourth to half an inch long. *Flowers* in terminal clusters, appearing rather in advance of the leaves; *pedicels* about half an inch long, hairy, bracteate at base, and em-

braced by numerous imbricated coriaceous bud-scales. *Calyx* very short and hairy. *Corolla* of various shades, from very pale red to bright purple, somewhat viscid; tube about 3 fourths of an inch long, very hairy; limb unequally 5-lobed. *Stamens* unequal, nearly twice as long as the corolla; *filaments* slender, curved, hairy within the tube, smooth above. *Ovary* hairy; *style* filiform, a little longer than the stamens; *stigma* capitate. *Capsule* oblong (half an inch to near an inch long), obtusely 5-angled, sulcate, hirsute, of a firm and almost bony texture.

Hab. Woodlands, and thickets: common. *Fl.* April—May. *Fr.* June.

Obs. There are apparently several *varieties* of this beautiful flowering shrub. The leaves are subject to large green succulent excrescences, produced by the puncture of insects. I have concluded to follow Drs. *Torrey* and *Beck*, in arranging our former *Azaleas* with this genus.

2. R. VISCOSUM, *Torr.* Leaves obovate, and lance-oblong; flowers accompanied with leaves, very viscid; tube of the corolla twice as long as the lobes; stamens somewhat exserted. *Beck, Bot. p.* 221.
Azalea viscosa. *L. and the Authors cited in this work.*
Also? A. viscosa palustris. *Marsh. Arbust. p.* 16.
Also? A. glauca. *Muhl. Catal. p.* 21. *Pursh, Am.* 1. *p.* 154. *Lindl. Ency. p.* 144. *Eat. Man. p.* 49.

CLAMMY RHODODENDRON. *Vulgò*—Sweet white Honeysuckle.

Stem 4 to 6 feet high, with numerous short spreading and often crooked branches above; young branches bristly. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, mostly obovate, or lance-obovate, short-mucronate, smoothish, bristly on the midrib and petiole, bristly-ciliate on the margin; *petioles* 1 to 2 lines long. *Flowers* in terminal clusters, appearing after the leaves, sweet-scented; *pedicels* about half an inch long, hairy, with filiform and spatulate bracts at base, and numerous imbricated bud-scales. *Calyx* very small and hirsute. *Corolla* white, glandular-pubescent and very viscid; tube about an inch long. *Stamens* a little longer than the corolla. *Style* longer than the stamens; *stigma* capitate, obscurely lobed.

Hab. Rocky woodlands; North Valley hill: not common. *Fl.* June. *Fr.*

Obs. A fragrant pretty species, with very clammy white flowers,—of which the *Azalea glauca, Pursh*, appears to be only a *variety*. Collected in 1830, by D. TOWNSEND, Esq.

* * *Flowers Decandrous: leaves semperviren*t.

3. R. MAXIMUM, *L.* Leaves oblong, abruptly acuminate, thick and coriaceous, glabrous, paler beneath; racemes terminal, densely thyrsoid, or corymbose; calyx-segments ovate-oblong, obtuse; corolla subcampanulate. *Beck, Bot. p.* 220. Icon, *Mx. f. Sylva.* 2. *tab.* 67.

LARGEST RHODODENDRON. *Vulgò*—Mountain Laurel. Rose Bay.

Stem 6 to 8 or 10 feet high, with stout irregular branches. *Leaves* 3 to 6 inches long, and 1 to 2 inches wide, elliptic-oblong, with a short acumination, sometimes cuneate at base, revolute on the margin, very smooth, green above, paler or ferruginous beneath; *petioles* thick, half an inch to an inch long. *Flowers* in dense terminal thyrsoid or corymbose racemes, invested at base with spatulate-oblong acuminate hairy bracts, or bud-scales; *pedicels* an inch to an inch and half long, glandular-pubescent, viscid, with filiform pubescent bracts at base. *Calyx* colored, deeply 5-parted; segments nearly oval, minutely pubescent. *Corolla* palish rose-

red; tube short, somewhat pubescent; limb with 5 large spreading oblong obtuse lobes, rather unequal, the upper one largest, with numerous yellow or orange-colored spots near the base, and often emarginate at apex. *Stamens* unequal, declined, rather shorter than the corolla; *filaments* pubescent at base. *Style* about as long as the stamens; *stigma* subclavate, obtuse. *Capsule* ovoid-oblong, obtusely angled. *Seeds* numerous, minute.

Hab. Bank of the Schuylkill; Black Rock: rare. *Fl.* Junc. *Fr.*

Obs. This magnificent ornament of our mountain forests is rare in Chester County; having only been observed along the Schuylkill, on the north-eastern boundary of the County. Five or six additional species, as the genus is here constituted, are enumerated in the U. States.

†† *Corolla polypetalous.*

210. CLETHRA. *L. Nutt. Gen.* 392.

[*Klethra*, the ancient Greek name for the Alder; which it somewhat resembles.]

Calyx 5-parted, persistent. *Petals* 5. *Stamens* exserted. *Style* as long as the stamens, persistent; *stigmas* 3. *Capsule* 3-celled, 3-valved, covered by the calyx. *Seeds* numerous.

Shrubs: leaves alternate, deciduous; flowers in terminal spiked or paniculate racemes. *Nat. Ord.* 170. *Lindl.* Ericeæ.

I. C. alnifolia, *L.* Leaves cuneate-obovate, acute, coarsely serrate, smooth and green on both sides; racemes spiked, bracteate, hoary-tomentose. *Beck, Bot. p.* 218.

Alder-leaved Clethra. *Vulgò*–Sweet Pepper-bush. White Alder.

Stem 4 to 6 or 8 feet high, branched, with an exfoliating bark; young branches puberulent. *Leaves* 2 to 3 inches long, and 1 to near 2 inches wide, acute, or with a short acumination; serratures acuminate; *petioles* 1 fourth to 1 third of an inch long, and, with the midrib and nerves beneath, hairy-pubescent. *Racemes* 3 to 6 inches long, simple, or often with 2 or 3 branches from the base, bearing numerous fragrant flowers; *pedicels* short, each with a lance-linear *bract* at base twice as long as the pedicel,—the peduncles, pedicels, bracts and calyx, covered with a short white downy pubescence. *Calyx-segments* ovate-oblong, rather obtuse. *Petals* white, obovate-oblong, obtuse, twice as long as the calyx, slightly connected at base. *Stamens* a little longer than the petals; *filaments* reflexed at apex before flowering, causing the anthers to be inverted; *anthers* erect after flowering, free and acute at base, 2-lobed at summit; lobes diverging, opening by pores at apex. *Ovary* subglobose, hairy; *style* hairy at base, finally a little longer than the stamens; *stigmas* 3. *Capsule* subglobose, umbilicate, obscurely triangular, or torose, hairy, rather shorter than the calyx, and embraced by its ribbed segments. *Seeds* angular, scabrous, or reticulately rugose, pale tawny.

Hab. Wet thickets; E. Marlborough: not common. *Fl.* July, Aug. *Fr.* October.

Obs. Dr. *Torrey* (and I believe Mr. *Elliott*, also,) considers the *anthers* as lobed at *base*, and inverted *after* flowering; but, from the best examination I could make, the facts appear to me as above described. This shrub was found by Mr. Samuel Peirce, near his residence, in East Marlborough, and brought to me in 1827. I have not met with it elsewhere in the County. Three or four other species have been enumerated in the Southern States,—some of which Mr. *Nuttall* thinks are doubtful.

211. PYROLA. *L. Nutt. Gen.* 389.

[Latin, diminutive of *Pyrus*, a pear; from a resemblance in the leaves.]

Calyx 5-parted, or 5-cleft. *Petals* 5, deciduous. *Style* persistent, exserted, or very short; *stigma* annulate, or peltate. *Capsule* 5-celled, 5-valved. *Seeds* numerous, arillate, or samara-like.

Low suffruticose evergreens: leaves alternate, or subopposite, aggregated at the root, or near the summit of the stem, sempervirent; flowers racemose on scapes, or subumbellate on terminal peduncles. *Nat. Ord.* 173. *Lindl.* PYROLACEÆ.

† *Style exserted.* * *Stigma annulate.*

1. P. ROTUNDIFOLIA, *L.* Leaves orbicular, obsoletely crenate-serrate, coriaceous and shining, scarcely as long as the dilated petiole; scape with 2 or 3 ovate-lanceolate bracts; calyx 5-parted, segments ovate-oblong; style declinate. *Beck, Bot. p.* 226.

ROUND-LEAVED PYROLA.

Root creeping. *Leaves* radical, orbicular, or roundish-ovate, an inch and half to 2 inches in diameter, with conspicuous branching reticulated nerves terminating at the obscure cartilaginous serratures on the margin; *petiole* margined, about as long as the leaf, and sometimes much longer. *Scape* 5 to 10 inches high, with amplexicaul *bracts* at base, and 2 or 3 remote ovate-lanceolate ones above. *Raceme* terminal, smooth, 2 to 3 inches long; *pedicels* about 1 third of an inch long, each with a lanceolate *bract* at base as long as the pedicel. *Flowers* nodding, fragrant. *Calyx-segments* about 1 third the length of the petals. *Petals* white, often with a reddish tinge, obovate. *Stamens* shorter than the petals, ascending; *filaments* smooth, flat; *anthers* large, oblong, with 2 pores at base, erect before the flower expands, reflexed afterwards, when, consequently, the pores appear to be at the summit. *Style* longer than petals, declined and curved; *stigma* 5-lobed, with a ring just below the lobes. *Capsule* depressed-globose, obtusely 5-angled; valves opening at base, connected by tomentose filaments. *Seeds* minute, coated with a membranaceous diaphanous integument, tapering at each end.

Hab. Woodlands: frequent. *Fl.* June. *Fr.* August—September.

2. P. ELLIPTICA, *Nutt.* Leaves oblong-oval, or elliptic-ovate, plicately serrulate, somewhat membranaceous, longer than the dilated petiole; scape naked, or with a single subulate-lanceolate bract; calyx 5-cleft; segments ovate, acuminate; style declinate. *Beck, Bot. p.* 226.

ELLIPTIC PYROLA. *Vulgò*—Shin leaf.

Root creeping. *Leaves* radical, 1 and a half to near 3 inches long, and 1 to near 2 inches wide, somewhat crenate-serrate, thinner and less coriaceous than the preceding, decurrent on the *petiole*, which is shorter than the leaf. *Scape* 4 to 6 inches high, acutely angular, naked, or with a single slender *bract*. *Raceme* 1 to 2 inches long, *pedicels* 2 to 3 lines long, shorter than the subulate-lanceolate *bracts* at base. *Calyx-segments* scarcely 1 fourth the length of the petals. *Petals* white, with a greenish tinge, obovate, rounded at apex. *Stamens* shorter than the petals, ascending. *Style*, &c. as in the preceding.

Hab. Woodlands: common. *Fl.* June. *Fr.* August—September.

Obs. Nearly allied to the preceding; and was long confounded with it.

* * *Stigma peltate.*

3. P. SECUNDA, *L.* Leaves ovate, acute, serrate, somewhat membranaceous, longer than the narrow petiole; raceme secund; style straight. *Beck, Bot. p.* 227.

ONE-SIDED PYROLA.

Root creeping, long, slender, stoloniferous. *Stem* decumbent, 1 to 2 or 3 inches high, leafy at summit, with small lanceolate scales below. *Leaves* an inch to an inch and half long, and 3 fourths of an inch to an inch wide, mucronate; *petiole* about half as long as the leaf. *Common peduncle* scape-like, terminal, 3 to 6 inches in length, with 2 or 3 lanceolate very acute *bracts* at base, and remote appressed ones above. *Raceme* 1 to 2 inches long, minutely puberulent; *pedicels* 2 to 3 lines long, all turned to one side, each with a lanceolate *bract* at base scarcely as long as the pedicel. *Calyx-segments* short, ovate. *Petals* greenish white, oblong. *Stamens* about as long as the petals, erect. *Style* longer than the petals, straight; *stigma* dilated, peltate, 5-lobed. *Capsule* small, depressed-globose, umbilicate, 5-angled, or lobed; valves opening at base, slightly connected by filaments. *Seeds* extremely minute.

Hab. Woodlands; Mica-slate hills; Londongrove: not common. *Fl.* July. *Fr.* Sept.

Obs. This occurs plentifully in some localities in Londongrove Township, and is occasionally met with North and East of West Chester; but it is much less common than either of the preceding.

†† *Style very short, and thick.*

4. P. UMBELLATA, *L.* Leaves cuneate-oblong, acute at base, serrate, uniformly green; flowers in a terminal subumbellate corymb. *Beck, Bot. p.* 227.

Chimaphila corymbosa. *Pursh, Am.* 1. *p.* 300. *Lindl. Ency. p.* 362. C. umbellata. *Nutt. Gen.* 1. *p.* 274. *Bart. Phil.* 1. *p.* 203. *Florul. Cestr. p.* 51. *Eat. Man. p.* 92.

UMBELLATE PYROLA. *Vulgò*—Pipsissawa. Winter-green.

Root creeping, long. *Stem* ascending, 3 to 6 inches long, fruticose, leafy at summit. *Leaves* subverticillate (often in 2 or 3 verticils), 1 to 2 inches long, and half an inch to 3 quarters wide, acute, or often cuneate-obovate and rather obtuse, sharply serrate, coriaceous, smooth and shining, tapering at base to a short petiole. *Common pedunele* terminal, solitary (sometimes 2 or 3 when the stem is slightly branched at summit), 3 to 4 or 5 inches long, bearing an imperfect umbel of 4 to 6 flowers. *Pediecls* about half an inch long, puberulent, with subulate *bracts* at or near the base. *Calyx* 5-cleft; *segments* broad-ovate, obtuse, or sometimes acute and even acuminate, ciliate. *Petals* reddish white, with a tinge of violet, roundish-obovate, concave, minutely ciliate. *Stamens* violet purple, nearly as long as the petals; *filaments* dilated at base, forming a spatulate-obovate ciliate disk; *anthers* large, sagittate, with 2 tubular truncated pores at base, inverted when the flower is expanded. *Ovary* obtusely conic, with a margined ring at base; *style* very short and thick, immersed in the umbilicate depression of the ovary; *stigma* peltate, orbicular, with a narrow margin, convex, viscid, 5-rayed, separable into 5 lobes. *Capsule* depressed-globose; valves opening at summit, and at base, nearly destitute of connecting filaments. *Seeds* very minute, subulate-linear, reticulate-striate, pale tawny.

Hab. Woodlands, particularly of northern exposure: common. *Fl.* June. *Fr.* Sept.

Obs. I have restored the *Chimaphilas*, of *Pursh*, to the genus *Pyrola*,—from deference to high Botanical Authority, rather than an entire conviction of its necessity;—though it must be acknowledged they are very nearly allied. This species has long been noted, as an *Indian* medicine, under the name of *Pipsissawa*. It is moderately bitter and astringent,—and I have used the infusion in some cases of slow typhoid fever with advantage: But its virtues have been trumpeted through the Gazettes (as is too often the case with both vices and virtues) much beyond the warranty of sober facts.

5. P. MACULATA, *L.* Leaves ovate-lanceolate, obtuse at base, rigidly and incisely serrate, discolored; peduncle 2 to 3-flowered. *Beck, Bot. p.* 227.

Chimaphila maculata. *Pursh, Am.* 1. *p.* 300. *Nutt. Gen.* 1. *p.* 275. *Bart. Phil.* 1. *p.* 204. *Ell. Sk.* 1. *p.* 505. *Bart. Am.* 1. *p.* 40 (ICON, *tab.* 11.). *Florul. Cestr. p.* 51. *Lindl. Ency. p.* 362. *Eat. Man. p.* 92.

SPOTTED PYROLA. *Vulgò*—Spotted Winter-green.

Root creeping, long. *Stem* assurgent, 2 to 4 inches high, fruticose. *Leaves* 1 to 2 or 2 and a half inches long, and 1 third to 3 fourths of an inch wide, smooth and coriaceous, with a whitish line along the midrib and nerves above, purplish beneath, the upper ones in one or two verticils of 3 or 4 leaves each, near the summit of the stem, tapering to an acute point,—and often a pair of ovate opposite ones below; *petioles* 1 to 2 or 3 lines long. *Common peduncle* terminal, mostly solitary (sometimes 2 or 3, as in the preceding), 3 to 4 or 5 inches long, puberulent, bearing 2 or 3 flowers in an umbellate manner (sometimes but 1); *pedicels* half an inch to an inch and half long, often with a minute subulate *bract* near the middle. *Calyx* 5-parted; segments ovate, obtuse, ciliate. *Petals* white, with a tinge of purple, broad-obovate, obtuse, concave, ciliate. *Stamens* short; *filaments* dilated at base into a spatulate-obcordate disk, which is densely villose at summit and on the margins; *anthers* large, the orifice of the pores spreading, 3-cornered, or somewhat 3-lobed. *Ovary* depressed-globose, with a margined ring at base; *style* short, thick, obconic, partly immersed in the umbilicate depression of the ovary; *stigma* peltate, orbicular, convex, glandular-viscid, separable into 5 lobes. *Capsule* nearly as in the preceding species.

Hab. Woodlands: common. *Fl.* June. *Fr.* September.

Obs. This species, erroneously called *Pipsissewa*, by *Pursh*, possesses properties similar, but inferior in degree, to those of the preceding. Five or six additional species are enumerated in the U. States.

212. MONOTROPA. *L. Nutt. Gen.* 388.

[Greek, *Monos*, one, and *trepo*, to turn; its flowers turning chiefly to one side.]

Perianth corolla-like, pseudo-polypetalous, persistent; outer petals gibbous at base. *Stamens* sometimes 8; *anthers* 1-celled, bilabiate. *Stigma* orbicular, umbilicate, or depressed. *Capsule* 5-celled, 5-valved. *Seeds* numerous, invested with an arillus-like membrane.

Herbaceous: destitute of verdure; leafless; flowers on scapes, racemose, or solitary and terminal. *Nat. Ord.* 173. *Lindl.* PYROLACEÆ.

* *Scape many-flowered.* HYPOPITHYS. *Nutt.*

1. M. LANUGINOSA, *Mx.* Scape pubescent above, bearing the flowers in a raceme; bracts and flowers tomentose-pubescent; stamens 8. *Beck, Bot. p.* 228.

Hypopithys lanuginosa. *Nutt. Gen.* 1. *p.* 271. *Bart. Phil.* 1. *p.* 201. *Eat. Man. p.* 185.

WOOLLY MONOTROPA. *Vulgò*—Pine-sap. False Beech-drops.

Whole plant orange tawny, or tan-color, and of a musky odor. *Root* perennial? squamose, parasitic? *Leaves* none. *Scapes* clustered, erect, 4 to 6 (and sometimes 12 or 15) inches high, mostly simple, angular, smooth below, pubescent above, furnished with lance-ovate scales, which are crowded and imbricated at base, more distant above, and become *bracts* to the pedicels, in the raceme at summit. *Raceme* 1 or 2 to 6 inches long, at first recurved, or convolute, with the

flowers secund and nodding, finally erect; *pedicels* varying from 1 line to an inch or more in length. *Petals* somewhat connected below; outer ones spatulate-oblong, gibbous at base, with a nectariferous cavity within; the alternate ones narrower, linear-oblong, or oblanceolate. *Stamens* mostly 8, shorter than the petals; *filaments* hairy, alternating at base with short deflexed pubescent tooth-like processes; *anthers* short, broad-ovate, or subreniform, opening outwards their whole breadth, the outer or lower lip much larger, spreading horizontally, and finally revolute. *Ovary* ovoid, obtusely 5-angled, grooved, hairy; *style* thick, as long or often longer than the stamens; *stigma* large, orbicular, concave, with a densely bearded margin. *Capsule* roundish-ovoid; dissepiments growing to the axis near the base, thereby preventing the valves from expanding.

Hab. Moist woodlands: not uncommon. *Fl.* July. *Fr.* September.

* * *Scape* 1-*flowered.*

2. M. UNIFLORA, *L.* Scape smooth, bearing a single terminal flower; flower nodding, or erect; stamens 10. *Beck, Bot. p.* 228. ICON, *Bart. Am.* 3. *tab.* 86. *f.* 1.

ONE-FLOWERED MONOTROPA. *Vulgò*—Indian Pipe. Bird's nest.

Whole plant white and smooth, becoming purplish black in drying. *Root* perennial? roundish, composed of brownish fleshy densely-matted brittle fibres, parasitic? *Scape* 5 to 8 or sometimes 12 inches high, simple, succulent, often growing in clusters, furnished with lance-ovate scales. *Flower* large, at first nodding, finally erect. *Petals* concave, spatulate-cuneate, truncate, gibbous at base, smooth externally, hairy within, and ciliate on the margins below. *Stamens* shorter than the petals; *filaments* hairy, alternating at base with short deflexed smooth tooth-like processes; *anthers* subreniform, opening by 2 transverse margined foramina. *Ovary* large, ovoid; *style* short, thick; *stigma* overtopping the stamens, large, orbicular, concave, margin not bearded. *Capsule* ovoid, obtuse, pentangular. *Seeds* minute.

Hab. Woodlands: frequent. *Fl.* June—July. *Fr.* September.

Obs. This species is more common than the preceding. These singular plants are called *parasitic;* but I cannot say that their usual mode of growth corresponds exactly with my notions of a genuine parasite. They certainly often seem to be totally unconnected with any other plant. One or two additional, but rather doubtful species, have been enumerated in the U. States.

[Cassia. Baptisia. Cercis. *Diedelphia Decandria.*]

Order 2. Digynia.

A. OVARY MOSTLY INFERIOR,—*or more or less adnate to the calyx.*

213. HYDRANGEA. *L. Nutt. Gen.* 404.

[Greek, *Hydor*, water, and *Angeion*, a vase; from the form of the capsules.]

Calyx adnate to the ovary, hemispheric, 5-toothed. *Petals* 5. *Ovary* inferior. *Capsule* hemispheric, truncate, 10-ribbed, 2-celled, beaked by the persistent styles, opening transversely between the beaks. *Seeds* numerous, oblong, striate.

Shrubs: branches and leaves opposite; flowers in terminal cymose or paniculate corymbs, often radiate and abortive. *Nat. Ord.* 191. *Lindl.* CAPRIFOLIACEÆ. (SAXIFRAGEÆ. *DC. Beck.*).

1. H. VULGARIS, *Mx.* Leaves oblong-ovate, acuminate, dentate, obtuse or subcordate at base; corymbs cymose; flowers mostly all fertile and uniform. *Beck, Bot. p.* 137.
H. fruteseens. *Marsh. Arbust. p.* 61.
H. arboreseens. *Willd. Sp.* 2. *p.* 633. *Ait. Kew.* 3. *p.* 63. *Muhl. Catal. p.* 44. *Lindl. Ency. p.* 366. var. vulgaris, *DC. Prodr.* 4. *p.* 14. *Also?* H. cordata. *Pursh, Am.* 1. *p.* 309. *Ell. Sk.* 1. *p.* 509. *DC. l. c. Lindl. l. c. Eat. Man. p.* 179.

COMMON HYDRANGEA.

Stem 4 to 6 feet high, with opposite branches and a large pith; young branches pubescent. *Leaves* 3 to 6 inches long, and 2 to 3 or 4 inches wide, sometimes inclining to obovate, with coarse unequal obtusely-mucronate teeth, midrib and nerves pubescent on both sides, sprinkled with short hairs on the upper surface, smoothish paler and somewhat glaucous beneath; *petioles* 1 to 2 inches long, flattish, or obscurely margined, nerved, pubescent, subconnate at base. *Corymbs* terminating the young branches, flattish, or cyme-like, pedunculate, pubescent; subdivisions with subulate *bracts* at base; pedicels unequal. *Calyx* colored; tube adnate to the ovary, 10-nerved; limb minutely 5-toothed. *Petals* white, or ochroleucous, lance-ovate, small. *Stamens* a little unequal, much longer than the petals. *Styles* short, thick, persistent, diverging. *Capsule* small, hemispherical, 10-ribbed, 2-celled (or 2 connate capsules?), opening at summit between the persistent styles, and finally with numerous horizontal fissures between the ribs. *Seeds* striately ribbed, dark brown.

Hab. Bank of the Schuylkill; Black Rock: rare. *Fl.* July. *Fr.* Sept.—Oct.

Obs. Collected by D. TOWNSEND, Esq. in 1830. Two other species are enumerated in the U. States;—beside the H. *cordata*,—which is believed to be only a *variety* of this, with large subcordate leaves, and flowers sometimes radiated.

214. SAXIFRAGA. *L. Nutt. Gen.* 405.

[Lat. *Saxum*, a rock, and *frango*, to break; from often growing in the clefts of rocks.]

Calyx 5-parted, persistent, often adnate to the base of the ovary. *Petals* 5, entire, with short claws. *Ovary* rather superior. *Capsule* 2-celled, 2-beaked (or rather 2 acuminate connate carpels), opening between the beaks. *Seeds* numerous.

Herbaceous: polymorphous; leaves alternate, or opposite, often all radical; flowers of the american species in paniculate cymes, or fascicles. *Nut. Ord.* 38. *Lindl.* SAXIFRAGEÆ.

1. S. VIRGINIENSIS, *Mx.* Leaves radical, more or less spatulate-ovate, often obtuse, crenate-dentate, tapering at base to a broad petiole; scape nearly leafless; cymes corymbose-paniculate; flowers subsessile, crowded; petals obovate-oblong, more than twice as long as the calyx; capsule half inferior. *Beck, Bot. p.* 137.
S. nivalis. *Willd? Sp.* 2. *p.* 645. *Muhl. Catal. p.* 44. Not of *Pers? Ait. Pursh, Nutt. DC. Hook. Lindl. Eat.*
S. virginica. *Pers. Syn.* 1. *p.* 488. *Nutt. Gen.* 1. *p.* 285. *Bart. Phil.* 1. *p.* 208. *Florul. Cestr. p.* 52.
S. vernalis. *Bigel. Bost. p.* 177. Also? *Hook. Am.* 1. *p.* 248.

VIRGINIAN SAXIFRAGA. *Vulgò*—Early Saxifrage.

Root perennial, thick, with numerous fibres. *Leaves* 3 fourths of an inch to an inch and half long, and half an inch to an inch wide, generally spatulate-ovate,

but varying to oval and cuneate-obovate, acute or obtuse, crenate-dentate, or repand-dentate, somewhat fleshy, or subcoriaceous, pubescent, tapering (often abruptly) to a broad nerved *petiole* half an inch to an inch and half long. *Scape* 4 to 12 inches high, fleshy, terete, nerved, pubescent, corymbosely paniculate at summit; the lower branches from the axils of small leaves, the upper ones *bracteate* at base. *Flowers* in rather dense terminal cymose clusters. *Calyx-segments* lance-ovate, acute, erect, smoothish. *Petals* white, sometimes tinged with purple, linear-elliptic, often a little inclining to spatulate, obtuse. *Stamens* about as long as the calyx; *filaments* subulate, smooth; *anthers* roundish, frequently purple *Ovary* adnate to the calyx at base; *styles* short, diverging, persistent.

Hab. Dry, rocky banks; woodlands, &c. frequent. *Fl.* April. *Fr.* June.

2. S. PENNSYLVANICA, *L.* Leaves radical, oblong-lanceolate, rather acute, tapering at base, obsoletely denticulate; scape leafless; cymes in an oblong panicle; flowers pedicellate; petals lance-linear, scarcely twice as long as the calyx; capsule superior. *Beck, Bot. p.* 138.

PENNSYLVANIAN SAXIFRAGE. *Vulgò*—Tall Saxifrage.

Root perennial, with coarse fibres. *Leaves* 4 to 6 or 8 inches long, and 1 to 2 inches wide, sometimes nearly oval, or oblanceolate, smoothish, rather thin and membranaceous, slightly ciliate on the margin, tapering gradually to a broad margined ciliate *petiole* 1 to 2 inches long. *Scape* 2 to 3 (sometimes 4 or 5) feet high, sulcate-striate, pubescent. *Cymes* at first in conglomerate heads, finally rather loose, in an oblong open panicle 12 to 18 inches in length; branches and pedicels with lance-linear or subulate *bracts* at base. *Calyx-segments* ovate-lanceolate, acute, spreading. *Petals* greenish yellow, small. *Stamens* longer than the calyx, persistent; *anthers* purplish orange-color. *Ovary* nearly free at base; *styles* short. *Carpels* connate, with the points distinct, acuminate, diverging. *Seeds* angular, dark brown.

Hab. Swampy meadows, and low grounds: frequent. *Fl.* May. *Fr.* July.

Obs. The pubescence on the branches and pedicels of both species is minutely glandular at summit. Two or three other species have been found within the U. States; and Prof. *Hooker* enumerates 41 species in British America.

215. CHRYSOSPLENIUM. *L. Nutt. Gen.* 369.

[Gr. *Chrysos*, gold, and *Splen*, spleen; figuratively, a *golden remedy* for the spleen.]

Calyx adnate to the ovary, with the limb 4 or 5-cleft; segments obtuse, often colored. *Corolla* 0. *Stamens* often 8. *Ovary* didymous, immersed in a fleshy crenate-lobed disk; *styles* very short, tapering, diverging, persistent. *Capsule* with 2 beaks, 2-valved, 1-celled. *Seeds* numerous, globose.

Herbaceous: subaquatic and prostrate; leaves opposite, or alternate; flowers sessile, terminal and dichotomal, subcorymbose. *Nat. Ord.* 38. *Lindl.* SAXIFRAGEÆ.

1. C. AMERICANUM, *Schw.* Stem procumbent, dichotomously branching; leaves generally opposite, roundish-ovate, obscurely crenate-lobed; flowers terminal and axillary; stamens mostly 8. *Hook. Am.* 1. *p.* 242.

C. oppositifolium. *Mx. Am.* 1. *p.* 269. *Pursh, Am.* 1. *p.* 269, *and all the American Botanists.* Not of *Linn.* (*fide Hook.*).

AMERICAN CHRYSOSPLENIUM. *Vulgò*—Golden Saxifrage. Water carpet.

Plant smooth, purplish green. *Root* perennial? fibrous. *Stem* prostrate, 4 to 8 or 10 inches long, angular, succulent, with short axillary opposite branches to-

wards the base, and dichotomously branching near the summit. *Leaves* 1 third to 3 fourths of an inch long, and generally wider than long, somewhat fleshy, obtuse or rounded at apex, abruptly and often truncately narrowed at base to a flat *petiole* 1 to 2 or 3 lines long, generally in opposite pairs, not unfrequently single just below the subterminal bifurcations of the stem. *Flowers* sessile, terminal, axillary and dichotomal, and thus appearing somewhat corymbose on the short terminal branches. *Calyx* 4-cleft. *Stamens* generally, if not always, 8, (sometimes wanting?), very short, inserted in the notches of the crenate disk which surrounds the ovary; *anthers* reddish orange-color. *Capsule* adnate to the calyx at base, 1-celled, terminating in 2 ovoid acuminate diverging lobes, partially opening by 2 valves. *Seeds* globose, hispid, reddish brown.

Hab. Shaded springs, and rocky rivulets: frequent. *Fl.* April, May. *Fr.* May, June.

Obs. Prof. *Hooker* appears to be confident that this is distinct from the European *C. oppositifolium*. It is uncertain whether we have any other species in the U. States;—though Prof. H. enumerates 2 in British America.

216. MITELLA. *L. Nutt. Gen.* 407.

[Latin, diminutive of *Mitra*, a cap; the seed-vessel resembling a *little Mitre*.]

Calyx campanulate, 5-cleft, partially adnate to the base of the ovary. *Petals* 5, pinnatifid, inserted on the calyx, *Styles* short, diverging. *Capsule* 1-celled, semi-bivalved; valves equal. *Seeds* numerous, erect in the bottom of the capsule.

Herbaceous: leaves mostly radical; scape bifoliate, or naked; flowers in a terminal raceme. *Nat. Ord.* 33. *Lindl.* SAXIFRAGEÆ.

1. M. DIPHYLLA, *L.* Radical leaves cordate, acute, sub-lobed, dentate, on long petioles; scape with 2 opposite sessile acuminate and often 3-lobed leaves above the middle; petals fimbriate-pinnatifid. *Beck, Bot. p.* 138. ICON, *Bart. Am.* 3. *tab.* 89.

TWO-LEAVED MITELLA. *Vulgò*—Bishop's cap. Bastard Amer. Saniele.

Root perennial. *Radical leaves* an inch and half to 3 inches long, and 1 to near 3 inches wide, roundish-cordate at base, tapering at apex, somewhat lobed, doubly and unequally incised-dentate, membranaceous, with bristly hairs on the upper surface, margin, and nerves beneath; *petioles* 2 to 6 inches long, clothed with numerous white and rather retrorse bristles, especially near the leaf. *Scape* 12 to 15 inches high (often several from the same root), slender, striate, slightly pubescent, with 2 opposite sessile leaves an inch or two below the raceme. *Flowers* a little distant, in a simple slender terminal raceme 4 to 8 inches in length; *pedicels* 1 to 2 lines long, pubescent, each with a minute obtuse *bract* at base. *Calyx* campanulate, the free portion becoming scarious; segments ovate, acute. *Petals* white, twice as long as the calyx, deeply pinnatifid towards the apex, entire and cuneate at base, inserted between the calyx-segments. *Stamens* very short, inserted on the calyx near the limb, or orifice. *Ovary* adnate to the bottom of the calyx, compressed, ovate, minutely muricate; *styles* very short, diverging, persistent; *stigmas* obtuse. *Capsule* somewhat compressed, roundish, opening between the styles nearly half way to the base. *Seeds* obovoid, tapering at base, subcompressed, slightly and obtusely margined, obscurely punctate, purplish black, smooth and shining.

Hab. Moist rich woodlands; along Brandywine: frequent. *Fl.* April, May. *Fr.* June

Obs. Two or three additional species are enumerated in the U. States.

B. Ovary superior.

217. SAPONARIA. *L. Nutt. Gen.* 408.

[Latin, *Sapo*, soap; its mucilage affording a substitute for that article.]

Calyx tubular, cylindric, 5-toothed, naked at base. *Petals* 5, unguiculate, crowned at throat with a petaloid appendage; claw as long as the calyx. *Capsule* oblong, 1-celled. *Seeds* numerous, small.

Herbaceous: stem nodose; leaves opposite, subconnate, entire; flowers terminal, fasciculate-panicled. *Nat. Ord.* 140. *Lindl.* Caryophylleæ.

1. S. officinalis, *L.* Leaves lance-ovate, acute, or obtuse; flowers fasciculate; calyx terete; appendages of the petals linear. *Beck, Bot. p.* 49.

Officinal Saponaria. *Vulgò*—Soap-wort. Bouncing Bet.

Gallicè—La Savonnierc. *Germ.*—Das Seifenkraut. *Hisp.*—Jaboncra.

Root perennial, creeping. *Stem* 12 to 18 inches high, terete, somewhat scabrous. *Leaves* an inch and half to 3 inches long, and 3 fourths of an inch to an inch and half wide, mostly acute, sometimes obtuse, 3-nerved, smooth, sessile, narrowed almost to a petiole at base, subconnate. *Panicle* terminal, fasciculate; *pedicels* short, with opposite lanceolate *bracts* at base. *Calyx* about 3 fourths of an inch long, cylindric. *Petals* reddish white, or pale rose-color, with a small petaloid process at throat; *lamina* flat, cuneate-obcordate; the number of petals often increased by the abortion, or conversion, of stamens. *Stamens* as long as the claws of the petals. *Styles* as long as the stamens. *Capsule* nearly as long as the calyx. *Seeds* compressed, reniform-orbicular, punctate.

Hab. About gardens, yards, and waste places: frequent. *Fl.* July, Aug. *Fr.* Sept.

Obs. An introduced plant, and often somewhat troublesome in gardens. When bruised, and agitated in water, it raises a lather like soap; and has been used as a substitute for it. A decoction has been employed, sometimes, as a wash for the itch, and other cutaneous diseases. There are no native species; and this is the only one of the genus which has become naturalized in the U. States.

Order 3. Trigynia.

218. SILENE. *L. Nutt. Gen.* 412.

[Gr. *Sialon*, saliva; in allusion to the frothy viscid matter frequent on the stems.]

Calyx tubular, inflated, or cylindric, 5-toothed, naked at base. *Petals* 5, unguiculate, mostly crowned at throat. *Ovary* superior. *Capsule* 3-celled at base, opening at summit into 6 teeth.

Herbaceous: stem nodose; leaves verticillate, or opposite, entire; flowers paniculate. *Nat. Ord.* 140. *Lindl.* Caryophylleæ.

* *Calyx inflated: Petals not crowned.*

1. S. stellata, *Ait.* Leaves verticillate in fours, oval-lanceolate, long-acuminate; calyx loose and bladder-like, pubescent; lamina of the petals fimbriate. *Beck, Bot. p.* 47.

Cucubalus stellatus. *Willd. Sp.* 2. *p.* 686. *Mx. Am.* 1. *p.* 271. *Pers. Syn.* 1. p. 496. *Muhl. Catal. p.* 45. *Pursh, Am.* 1. *p.* 315. *Nutt. Gen.* 1. *p.* 287. *Bart. Phil.* 1. *p.* 211. *Ell., Sk.* 1. *p.* 514. *Bigel. Bost. p.* 184. *Torr. Fl.* 1. *p.* 449. *Ejusd. Comp. p.* 190. *Florul. Cestr. p.* 53. *Eat. Man. p.* 114.

STELLATE, OR STAR-LIKE SILENE. *Vulgò*—Four-leaved Campion.

Whole plant pulverulently pubescent. *Root* perennial. *Stem* 2 to 3 or 4 feet high, simple, terete, slender. *Leaves* 2 to 3 inches long, and 3 fourths of an inch to an inch wide, much acuminate, indistinctly nerved, sessile, in distant verticils of 4. *Flowers* in a terminal panicle; the branches mostly opposite (the lower ones often verticillate), from the axils of small lanceolate *bracts*. *Calyx* dilated, subcampanulate, membranaceous, pubescent, pale green, or greenish white with green nerves; segments ovate, acuminate. *Petals* white; *lamina* cuneate, dilated and lacerately fringed at apex, naked at throat; *claws* nearly as long as the calyx, connected at base with each other, and with the filaments, by a dense white tomentose web, which sheaths the pedicel of the ovary. *Stamens* as long as the corolla. *Ovary* ovoid, pedicellate; *styles* longer than the stamens. *Capsule* roundish-obovoid, smooth, supported on a pedicel, or stipe, within the calyx; *stipe* clavate, tomentose, or rather embraced by a tomentose sheath. *Seeds* reniform, rugose, or scabrous-punctate, reddish brown.

Hab. Woodlands: frequent. *Fl.* July. *Fr.* August—September.

Obs. This, though clearly not a *Cucubalus*, is widely different in its general aspect from the following.

* * *Calyx ovoid-cylindric: Petals crowned.*

2. S. ANTIRRHINA, *L.* Leaves opposite, linear-lanceolate, acute; calyx ovoid-cylindric, smooth; petals small, bifid, or emarginate. *Beck, Bot. p.* 48.

ANTIRRHINUM-LIKE SILENE. *Vulgò*—Catch-fly.

Root annual. *Stem* 1 to 2 feet high, terete, smoothish, paniculately branching; branches opposite, or often dichotomous near the summit; a portion of the internodes of the stem and branches at length coated with a dark purple viscid matter. *Leaves* 1 to 2 inches long, and 1 to 3 or four lines wide [*radical* ones spatulate-lanceolate, *Torr.*], covered with rough dots. *Flowers* on slender peduncles half an inch to an inch or more in length, in a loose terminal trichotomous panicle. *Calyx* 10-ribbed, with short acuminate and often dark purple teeth. *Petals* white, often tinged with purple, small, with a minute crown at throat (petals apparently often wanting). *Stamens* shorter than the calyx; *filaments* very slender, smooth at base, inserted on an elevated ring surrounding the pedicel of the ovary. *Styles* short. *Capsule* ovoid-oblong, nearly as long as the calyx, on a very short *stipe*. *Seeds* numerous, roundish reniform, obtusely-muricate, or rather striate with moniliform ridges, dark purple.

Hab. Dry, sandy fields; about gardens, &c. frequent. *Fl.* June. *Fr.* July.

Obs. I once thought the *petals* of this species were generally wanting; but within the last few years I have frequently observed them,—small, indeed, but fresh and fully expanded, during the day. Nine or ten additional species, as the genus is at present constituted, are enumerated in the U. States,—of which the S. *pennsylvanica* ought to be found on the red sandstone hills on the northern side of this County; but I have not yet met with it. I have collected fine specimens of the beautiful S. *virginica*, in the adjoining County of New Castle, near Delaware City.

219. STELLARIA. *L. Nutt. Gen.* 413.

[Latin, *Stella*, a star; the corolla, of bifid petals, resembling a star.]

Calyx deeply 5-parted, or rather of 5 sepals, spreading. *Petals* 5, deeply bifid. *Stamens* sometimes 3, 5, or 8, by abortion. *Ovary* superior. *Capsule* 1-celled, 6-valved at apex, many-seeded.

Herbaceous: stem nodose, furnished with an elastic centre; leaves opposite; flowers axillary, dichotomal, or terminal and subpaniculate. *Nat. Ord.* 140. *Lindl.* CARYOPHYLLEÆ.

1. S. MEDIA, *Sm.* Stem procumbent, marked with a lateral alternating pubescent line; leaves ovate, smooth, mostly petiolate; petals shorter than the calyx; stamens 3, or 5 to 10. *Beck, Bot. p.* 50.
Alsine media. *Willd. Sp.* 1. *p.* 1511. *Pers. Syn.* 1. *p.* 330. *Ait. Kew.* 2. *p.* 175. *Muhl. Catal. p.* 33.

MIDDLE STELLARIA. *Vulgò*—Common Chickweed.

Gallicè—Morgeline. *Germanicè*—Das Vogelkraut. *Hisp.*—Pajarera.

Root annual? *Stem* 8 to 12 or 15 inches long, weak, prostrate, dichotomously branched, with a lateral hairy line which changes sides at each joint. *Leaves* half an inch to an inch long, and 1 third to 3 fourths of an inch wide, distant below, rather crowded at the extremities of the branches, acute, mostly on ciliate *petioles* 1 fourth to 3 fourths of an inch long, the upper ones often sessile. *Peduncles* about an inch long, subterminal, axillary, or in the forks of the branches, solitary, 1-flowered, marked with a hairy line. *Calyx* hairy; sepals lance-ovate. *Petals* white, small, cleft nearly to the base. *Stamens* mostly 3 or 5, sometimes 7, 8 or 10. *Capsule* ovoid, scarious. *Seeds* muricate, compressed, orbicular, with an acute notch at base, reddish brown.

Hab. Gardens, and cultivated lots: common. *Fl.* March—Dec. *Fr.* May—Dec.

Obs. This foreigner is extensively naturalized. It is a hardy plant, and when the winters are mild, may be found in flower in every month of the year.

2. S. PUBERA, *Mx.* Stems decumbent, spreading, often with 2 pubescent lines; leaves ovate-oblong, or lance-oblong, somewhat ciliate and undulate, sessile; petals longer than the calyx. *Beck, Bot. p.* 51.

PUBESCENT STELLARIA.

Root perennial, of numerous long coarse fibres. *Stem* 6 to 12 inches long, often cespitose, or numerous from the same root, somewhat erect, but rather weak, diffuse and straggling, dichotomously branched above; the branches mostly with opposite hairy lines, the stem below often with a single alternating one. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to 3 quarters wide, acute, often tapering at both ends, the midrib mostly hairy, and the margins ciliate and wavy. *Peduncles* half an inch to an inch long, terminal or axillary, mostly dichotomal, hairy, often recurved. *Flowers* stellately spreading, large (half an inch to near 3 quarters in diameter). *Calyx* nearly smooth; sepals ovate-lanceolate, somewhat hairy and ciliate at base. *Petals* white, deeply bifid. *Capsule* roundish-ovoid. *Seeds* much compressed, orbicular-reniform, roughish, crenate or obtusely muricate on the margin, reddish brown.

Hab. Bank of the Schuylkill, at Black Rock: rare. *Fl.* April—May. *Fr.* June.

Obs. Collected by D. TOWNSEND, Esq. in 1830.

3. S. BOREALIS, *Bigel.* Stems procumbent, or ascending, flaccid, diffuse, glabrous; leaves oval-lanceolate, or lance-oblong, acute at each end, sessile; petals scarcely as long as the 3-nerved calyx. *Beck? Bot. p.* 51. var. *a. Hook. Am.* 1. *p.* 94.
S. Alsine. *Muhl. Catal. p.* 45. Not? of *Willd.* and *Pers.*
S. uliginosa. *Nutt. Gen.* 1. *p.* 289. *Bart. Phil.* 1. *p.* 213. Also? *Eat. Man. p.* 356. Not? of *Ait.* nor *Lindl.*
S. lanceolata. *Torr. Fl.* 1. *p.* 453. *Ejusd. Comp. p.* 191. *Florul. Cestr. p.* 53. Also, *Beck, l. c.* Not of *DC.*

Spergulastrum lanceolatum. *Mx. Am.* 1. *p.* 275. *DC. Prodr.* 1. *p.* 421. Also, *Muhl. l. c.*
Micropetalon lanceolatum. *Pers. Syn.* 1. *p.* 509. *Pursh, Am.* 1. *p.* 320. Also, *Eat. Man. p.* 225.

Northern Stellaria.

Whole plant smooth, pale green. *Root* perennial. *Stem* 6 to 10 or 12 inches long, very slender and weak, branched, 4-angled, growing in diffuse bunches. *Leaves* half an inch to an inch in length, and 1 fourth to 1 third of an inch wide, nerveless, with branching or anastomosing deeper green veins, often slightly ciliate at base. *Peduncles* axillary and terminal, slender, solitary, or often elongated and paniculately branched, with subulate scarious *bracts* at the base of the subdivisions, or pedicels. *Sepals* lanceolate, very acute, 3-nerved (nerveless, *Bigel. Torr.*). *Petals* white, small, at first shorter than the calyx, finally about as long, bifid, sometimes wanting. *Styles* mostly 3? (generally 4, *Authors*). *Capsule* ovoid, about as long as the calyx. *Seeds* compressed, cochleate-orbicular, with a short oblique process at base, and a thickish narrow rough margin, reddish brown.

Hab. Swampy springs, in the Mica-slate range: frequent. *Fl.* May. *Fr.* July.

Obs. This has been examined by Dr. *Torrey*, and pronounced to be his S. *lanceolata*; and it agrees well with the S. *borealis*, *Bigel.* var. *a. Hook.* of which I have received specimens from British America, through the kindness of Prof. *Hooker*. At the same time I must confess, that the only difference, worth mentioning, which I can discover between our plant and the European S. *Alsine*, *Willd.* (S. *uliginosa*, *Ait.* S. *aquatica*, *DC.*) is in the leaves of the latter being more constantly and conspicuously ciliate at base.

4. S. longifolia, *Muhl.* Stem erect, acutely 4-angled, slender, smoothish; leaves lance-linear, acute, sessile; panicle terminal, divaricate, bracteate; petals about as long as the 3-nerved calyx. *Beck, Bot. p.* 51.
S. graminea. *Nutt. Gen.* 1. *p.* 289. *Bart. Phil.* 1. *p.* 213. Not? of *Willd. Pers. Ait. DC. &c.*
Spergulastrum gramineum. *Mx. Am.* 1. *p.* 276. Also, *DC. Prodr.* 1. *p.* 422.
Micropetalon gramineum. *Pers. Syn.* 1. *p.* 509. *Pursh, Am.* 1. *p.* 320.
M. longifolium. *Eat. Man. p.* 225.

Long-leaved Stellaria.

Plant yellowish green. *Root* perennial. *Stem* 12 to 18 inches high, slender and weak, but mostly erect, prominently 4-angled, often minutely scabrous on the angles, branching dichotomously. *Leaves* 1 to 2 inches long, and 1 to 2 lines wide, nearly linear, smooth, with anastomosing veins, minutely scabrous on the margin. *Flowers* in a loose slender terminal or subterminal panicle, with the branches elongated, spreading; *pedicels* filiform, very unequal in length, bracteate at base. *Sepals* lanceolate, acute, 3-nerved. *Petals* white, spreading, deeply bifid, at first shorter, finally rather longer than the calyx. *Ovary* ovoid, obtuse, narrowed at base, striate; *styles* mostly 3? (very often 4, *Torr.*). *Capsule* ovoid, shorter than the calyx. *Seeds* minute, scabrous.

Hab. Low swampy meadows, and thickets: frequent. *Fl.* May. *Fr.* June—July.

Obs: This, certainly, as Dr. *Torrey* remarks, is very nearly allied to the S. *graminea*, of Europe. The leaves of our plant are generally longer and more linear,—and the panicle, and flowers, something smaller, than in my European specimens; but, further than that, I can perceive no remarkable difference. It is

surely, I think, very distinct from the preceding. Two or three additional species have been enumerated in the U. States; and five or six in British America.

220. ARENARIA. *L.* *Nutt. Gen.* 414.

[Latin, *Arena*, sand; the plants generally growing in a sandy soil.]

Calyx 5-sepalled. *Petals* 5, entire. *Ovary* superior. *Capsule* 1-celled, mostly 6-valved at apex, many-seeded.

Herbaceous: stems nodose; leaves opposite, sometimes stipular; flowers axillary or terminal, often paniculate. *Nat. Ord.* 140. *Lindl.* CARYOPHYLLEÆ.

Leaves without stipules.

1. A. STRICTA, *Mx.* Stems numerous, mostly erect, simple, smooth; leaves subulate-linear, spreading, with fascicles of erect linear leaves in the axils; panicle trichotomous, spreading; petals twice as long as the acute 3-ribbed smooth sepals. *Beck, Bot. p.* 52. ICON, *Hook. Am.* 1. *tab.* 33.

UPRIGHT ARENARIA.

Root perennial. *Stems* 4 to 8 or 10 inches high, cespitose, or growing in thick bunches, erect, or sometimes decumbent, terete, slender, with short internodes, often dark purple, simple below, paniculately and trichotomously branched at summit. *Leaves* half an inch to 3 quarters in length, very narrow, acute, sessile, rather rigid, smoothish, with a prominent midrib,—the axils producing sessile or subsessile fascicles of shorter erect and rather filiform-subulate leaves. *Panicle* terminal; branches and pedicels filiform, with lanceolate or subulate bracts at base. *Sepals* lance-ovate, very acute, or acuminate, smooth, conspicuously 3-nerved, margins scarious. *Petals* white, obovate-oblong, full twice the length of the calyx. *Stamens* longer than the calyx, but shorter than the petals. *Styles* rather shorter than the stamens. *Capsule* ovoid, about as long as the calyx. *Seeds* compressed, orbicular-reniform, rugosely scabrous, dark purple.

Hab. Serpentine rock, West-Chester: not common. *Fl.* May—Aug. *Fr.* June, Sept.

Obs. This species abounds on our sterile Serpentine rock; but I have never met with it elsewhere.

2. A. SERPYLLIFOLIA, *L.* Stems mostly procumbent, dichotomous, diffuse, retrorsely roughish-pubescent; leaves ovate, acute, subciliate; peduncles solitary; petals shorter than the acute 3 to 5-nerved scabrous sepals. *Beck, Bot. p.* 52.

THYME-LEAVED ARENARIA. *Vulgò*—Sand-wort.

Gallicè.—La Sabloniere. *Germ.*—Das Sandkraut. *Hisp.*—Arenaria.

Root annual. *Stems* 3 to 6 or 8 inches long, often numerous from the root, nearly procumbent, spreading, dichotomously branched, slender, rough with a very short retrorse pubescence. *Leaves* 2 to 3 lines long, ovate, rather acuminate, nerved, scabrous, ciliate, sessile. *Peduncles* 1 third to half an inch long, axillary and terminal. *Sepals* ovate-lanceolate, acuminate, 3 to 5-ribbed, scabrous-ciliate on the ribs, the outer ones broader. *Petals* white, oval, mostly shorter than the sepals, and often scarcely half as long. *Stamens* rather shorter than the petals. *Capsule* ovoid, finally longer than the calyx, tapering at apex, and, when the 6 teeth expand, appearing somewhat urceolate. *Seeds* minute, cochleate-reniform, striately muricate, reddish brown.

Hab. Dry, sandy banks; fields, &c. frequent. *Fl.* May—July. *Fr.* June—August.

Obs. This is probably an introduced species,—now extensively naturalized.

3. A. LATERIFLORA, *L.* Stem rather erect, slender, somewhat branched, pubescent; leaves elliptic-oblong, mostly obtuse, ciliate; peduncles lateral and terminal, solitary, elongated, generally bifurcate; one of the pedicels bibracteate near the middle; petals twice as long as the obtuse nerveless smooth sepals. *Beck, Bot. p.* 53. Icon, *Hook. Am.* 1. *tab.* 36.

Lateral-flowered Arenaria.

Root perennial. *Stem* 4 to 6 inches high, terete, very slender, but rather rigid, generally somewhat dichotomously branched, often simple, clothed with a short and rather retrorse pubescence. *Leaves* half an inch to near an inch long, and 1 fourth to 1 third of an inch wide, varying from ovate-oblong to elliptic and obovate-oblong, often rather acute, narrowed at base, sessile, or subsessile, roughish-punctate, obscurely nerved, the midrib and nerves beneath bristly-pubescent, margins ciliate. *Peduncle* an inch or more in length, filiform, generally axillary near the summit of the stem, and branching into 2 pedicels (sometimes a third dichotomal one); *pedicels* half an inch to an inch long, bracteate at base, and one of them with a pair of minute opposite *bracts* near the middle. *Sepals* ovate-oblong, obtuse, mostly nerveless and smooth. *Petals* white, obovate-oblong, obtuse, rather more than twice as long as the sepals. *Stamens* shorter than the petals; *filaments* pubescent, somewhat dilated and confluent at base,—or rather inserted on a margined hypogynous ring. *Ovary* ovoid, obtuse, narrowed at base; *styles* nearly as long as the stamens. *Capsule* ovoid, obtuse. *Seeds* compressed, subreniform-orbicular, rugosely scabrous, reddish brown.

Hab. Along Parke's rivulet, Downingtown: rare. *Fl.* June. *Fr.* July—August.

Obs. This has only been found in the above locality, in Chester County,—where it was detected by Mr. Joshua Hoopes, in 1830. The plant, erroneously so named in my Catalogue, proved to be a *Stellaria* (viz. S. *borealis*),—as I suspected at the time. Eight or ten additional species have been enumerated in the U. States;—and Prof. *Hooker* describes 20 in British America.

Order 4. Pentagynia.

221. CERASTIUM. *L. Nutt. Gen.* 417.

[Greek, *Keras*, a horn; in allusion to the form of the capsules.]

Calyx 5-sepalled. *Petals* 5, bifid or emarginate. *Capsule* 1-celled, mostly cylindrical, opening at apex with 10 teeth.

Herbaceous: stem nodose, with an elastic centre; leaves opposite; flowers terminal, subcapitate, or dichotomously paniculate. *Nat. Ord.* 140. *Lindl.* Caryophyllæ.

* *Petals scarcely longer than the calyx.*

1. C. VULGATUM? *L.* Leaves ovate and obovate, obtuse; bracts and outer sepals herbaceous; flowers in subcapitate clusters; calyces mostly longer than the pedicels. *Beck? Bot. p.* 53. Not of *Pers. Muhl.* Nor *Florul. Cestr.*

C. ovale? *Pers. Syn.* 1. *p.* 521.

C. hirsutum. *Muhl. Catal. p.* 46. *Ell. Sk.* 1. *p.* 524. Also, *Torr. Fl.* 1. *p.* 459. *Ejusd. Comp. p.* 194. *Eat. Man. p.* 88. Not of *DC.* nor *Florul. Cestr.*

Also, C. connatum. *Beck, Bot. p.* 55.

Common Cerastium. *Vulgò*—Mouse-ear Chickweed. Mouse-ear.

Plant pale green, very hairy, somewhat viscid when young. *Root* annual. *Stems* 5 to 8 or 10 inches high, terete, cespitose, mostly dichotomous at summit, rather erect, the lateral ones often spreading or decumbent. *Leaves* half an inch to 3 quarters in length, and 1 third to half an inch wide, varying from broad-ovate to elliptic and obovate, mostly obtuse and rounded at apex, sessile and subconnate, the lower ones narrowed at base, or somewhat spatulate. *Flowers* in dense terminal clusters, with a single flower in the fork of the stem; *pedicels* shorter than the flowers, bracteate at base; *bracts* and outer *sepals* rarely scarious on the margin. *Petals* white, cuneate-oblong, or oblanceolate, bifid at apex, mostly a little longer than the sepals. *Stamens* about half as long as the sepals. *Capsule* nearly cylindrical, a little curved, about twice as long as the calyx, opening at apex with 10 lanceolate acute erect teeth, which are revolute on the margin. *Seeds* compressed, cuneate-obovate, striately muricate, pale brown.

Hab. Pastures, and roadsides: frequent. *Fl.* May—Aug. *Fr.* June—Sept.

Obs. Through the kindness of Mr. VAUGHAN, and my friend Dr. PICKERING, I have had frequent opportunities to consult the *Muhlenbergian Herbarium*; and, with the aid of the latter gentleman, I have satisfied myself that this is *Muhlenberg's* C. *hirsutum*. At the same time, I must confess that I can see nothing in its character which does not agree well with the description of the *Linnæan* C. *vulgatum*, as determined by *Smith*. It has every appearance of being an introduced plant.

2. C. VISCOSUM, *L.* Leaves lance-oblong, rather acute; bracts and sepals white and scarious on the margins, and at apex; flowers subpaniculate; calyces mostly shorter than the pedicels. *Beck, Bot. p.* 53. Not of *Florul. Cestr.*

C. vulgatum. *Muhl. Catal. p.* 46. *Florul. Cestr. p.* 54. Also? *Pers. Syn.* 1. *p.* 520.

VISCID CERASTIUM.

Plant deeper green than the preceding, hairy, and somewhat viscid. *Root* perennial? (annual, *DC.*). *Stems* 6 to 12 or 15 inches high, cespitose, spreading, dichotomously paniculate at summit, often purplish. *Leaves* half an inch to an inch long, and 1 eighth to near half an inch wide, varying from ovate-oblong to linear-oblanceolate, mostly acute, sessile, the lower ones narrow. *Flowers* dichotomal and axillary; *pedicels* generally longer than the flowers, bracteate; *bracts* and *sepals* with a white scarious apex, and margins. *Petals* white, obovate-oblong, bifid at apex, scarcely as long as the sepals. *Capsule* cylindric, a little curved, rarely twice as long as the calyx, and often not more than one half longer. *Seeds* as in the preceding species.

Hab. Pastures, and open woodlands, &c. frequent. *Fl.* May, Aug. *Fr.* Junc, Sept.

Obs. This is also an introduced plant; and has much resemblance to the preceding. Indeed they seem to have been often confounded, or mistaken for each other, until Sir *J. E. Smith* set the matter right, by the *Linnæan Herbarium*. I have received specimens from France, labelled "C. *vulgatum*," which evidently belong to this species. The name, *viscosum*, is calculated to mislead young American Botanists,—as our C. *nutans* is much more viscid.

* * *Petals much longer than the calyx.*

3. C. TENUIFOLIUM, *Pursh.* Leaves lance-linear, acute, often longer than the internodes, more or less pubescent; panicle dichotomous, on a long terminal peduncle; flowers mostly in threes at summit; petals nearly 3 times as long as the calyx. *Beck, Bot. p.* 54.

C. arvense? *Bart. Phil.* 1. *p.* 216. Not? of *Linn. Muhl. Pursh, and others.*

C. pennsylvanicum. *Hook. Am.* 1. *p.* 104. Also, *DC. Prodr.* 1. *p.* 420. *Also?* C. pubescens. *DC. l. c. Beck, l. c. Eat. Man. p.* 88.

SLENDER-LEAVED CERASTIUM.

Root perennial, long and creeping. *Stems* 4 to 6 or 8 inches high, numerous from the root, erect, or declined at base, mostly simple, slender, pubescent, terminating in a naked peduncle 2 to 4 inches in length. *Leaves* an inch to an inch and half long, and 1 to 2 lines wide, often shorter than the internodes, mostly acute and a little callous at apex, pubescent when young, but at length becoming smoothish, sessile and subconnate, often with a small fascicle of leaves in the axils. *Panicle* usually twice dichotomous, with lanceolate *bracts* at the bifurcations, and a 1-flowered pedicel in the lower fork about half as long as the branches; the terminal branches bracteate near the middle, or rather at the base of the pedicels, with the central pedicel rather longer than the real branches,—and thus the flowers appear in threes at summit. *Sepals* oblong-lanceolate, acute, pubescent, scarious at apex and on the margin. *Petals* white, cuneate-obovate, bifid, or emarginate. *Stamens* about as long as the sepals. *Styles* as long as the stamens; *stigmas* subclavate. *Capsule* cylindric, 1 third to 1 half longer than the calyx, sometimes nearly twice as long. *Seeds* compressed, roundish-reniform, subcuneate, striately muricate, tawny, or light reddish brown.

Hab. Along the Schuylkill; Black Rock, &c. not common. *Fl.* May. *Fr.* June.

Obs. My friend Dr. PICKERING inclines to the opinion that this is distinct from C. *arvense*,—and I defer greatly to his judgment: But after a patient examination of my specimens, I profess myself unable to discover any important and constant difference. Our plant is larger, and I think generally less pubescent, than the acknowledged C. *arvense*;—yet, as Prof. *Hooker* remarks, "there are intermediate states which diminish the value of those characters." I have some specimens, indeed, collected by D. TOWNSEND, Esq. on our Mica-slate hills, which are quite villose, with the leaves decidedly inclining to lanceolate, and a larger, flaccid, and more spreading panicle. They seem to be intermediate between this species and the following.

4. C. VILLOSUM, *Muhl.* Leaves oblong-lanceolate, tapering and rather acute, mostly shorter than the internodes, thickish or subcoriaceous, densely villose; panicle terminal, somewhat elongated, dichotomously branched, villose and viscid; petals twice as long as the calyx. *Muhl. Catal. p.* 46.

C. oblongifolium (*and also* C. hirsutum). *Florul. Cestr. p.* 54. Not of *Torr.*

VILLOSE CERASTIUM.

Root perennial. *Stems* 6 to 10 or 12 inches high, cespitose, erect, or decumbent at base, mostly simple, rather stout, very villose, often densely tomentose at the joints, or base of the leaves, terminating in a stout naked peduncle 2 to 4 or 5 inches in length. *Leaves* 3 fourths of an inch to an inch and a quarter long, and 1 eighth to near half an inch wide at base, often ovate-lanceolate, tapering from near the base to the apex, but not unfrequently rather obtuse, closely sessile and subconnate, the lower ones sometimes obovate-oblong, often with a small fascicle of lance-linear leaves in the axils. *Panicle* elongated, somewhat spreading, frequently three times dichotomous, with ovate or lance-ovate *bracts* at the bifurcations, and a longish 1-flowered pedicel in the forks,—thus appearing somewhat trichotomous; branches and pedicels very villose, and considerably viscid.

Sepals lance-oblong, rather obtuse, often slightly emarginate, hairy, scarious at apex and on the margin. *Petals* white, cuneate-oblong, bifidly emarginate, about twice as long as the sepals. *Stamens* as long as the sepals. *Styles* about as long as the stamens. *Capsule* cylindric, about twice as long as the calyx; teeth erect, lanceolate, revolute on the margin. *Seeds* compressed, cuneate-obovate, muricate, reddish brown.

Hab. Serpentine rock; W. Chester; Strode's Mill: frequent. *Fl.* May. *Fr.* June, July.

Obs. This species, when my Catalogue was published, Mr. *Schweinitz* thought might be the C. *oblongifolium*, *Torr.* and it was hesitatingly inserted by that name. It was afterwards submitted to Dr. *Torrey*, who informed me it was not his plant; but he did not name it. I have since ascertained that it is the C. *villosum* of *Muhlenberg*—though labelled C. *lanatum*, in his Herbarium. It is also identical with the plant erroneously given as C. *hirsutum*, in my Catalogue. It appears to hold an intermediate station between C. *arvense*, and C. *nutans;* but sufficiently distinct, I apprehend, from both. It is a hardy plant,—the lower leaves living through the winter. It abounds on all our banks of serpentine rock;—where its large white flowers are quite conspicuous in the month of May; but it is very rarely to be met with elsewhere.

5. C. NUTANS, *Raf.* Viscid-pubescent; stem striate-sulcate, paniculately branched at summit; leaves elongated, linear-lanceolate, acute, finally shorter than the internodes; panicle much elongated, dichotomously branched, loose, with the flowers nodding on long pedicels; petals nearly twice as long as the calyx. *Beck*, *Bot. p.* 54.

C. longe-pedunculatum. *Muhl. Catal. p.* 46. *Bart. Phil.* 1. *p.* 215. *Florul. Cestr. p.* 54.

C. glutinosum. *Nutt. Gen.* 1. *p.* 291. Not of *DC.*

Also, C. viscosum. *Florul. Cestr. p.* 54. Not of *Linn.*

NODDING CERASTIUM.

Plant pale yellowish green, pubescent, and remarkably clammy. *Root* annual. *Stems* 8 to 12 or 15 inches high, several from the same root, erect, rather weak, nearly simple, deeply striate. *Leaves* 1 to 2 or 2 and a half inches long, and 1 fourth to near half an inch wide, sessile and amplexicaul, at first longer, finally shorter than the internodes; the lower ones oblanceolate, or subspatulate. *Panicle* terminal, dichotomous, at first short (but throwing out the long lower dichotomal pedicels), finally the branches are much elongated, 3 or 4 times dichotomous, spreading, with lance-oblong *bracts* at the bifurcations, and 1-flowered pedicels in the forks an inch to an inch and half in length. *Sepals* lance-oblong, rather obtuse, the inner ones scarious on the margin. *Petals* white, obovate-oblong, with a short bifid acumination, cuneate at base, scarcely twice as long as the sepals. *Stamens* shorter than the sepals. *Styles* short; *stigmas* clavate, spreading, and pubescent. *Capsule* cylindric, a little curved, nearly three times as long as the calyx; teeth erect, acuminate, the margins revolute. *Seeds* compressed, cuneate-obovate, with a broad groove round the edge, muricate, tawny, or pale reddish brown.

Hab. Moist low grounds; along shaded rivulets: frequent. *Fl.* May. *Fr.* June.

Obs. The plant intended by C. *viscosum*, in *Florula Cestrica*, was a young specimen of this. The C. *semidecandrum*, of the same work, was also a mistake,—being nothing but a starved specimen of *Stellaria media*! Two other species are enumerated in the U. States; and 10 species in British America.

222. AGROSTEMMA. *L.* *Nutt. Gen.* 418.

[Greek, *Agros*, a field, and *Stemma*, a garland; from its handsome flowers.]

Calyx tubular, 5-cleft, coriaceous. *Petals* 5, unguiculate, not crowned at throat; lamina obtuse, undivided. *Capsule* 1-celled, opening with 5 teeth at summit.

Herbaceous: stem nodose, paniculately branching; leaves opposite; flowers terminal, solitary, on long peduncles. *Nat. Ord.* 140. *Lindl.* CARYOPHYLLEÆ.

1. A. GITHAGO, *L.* Hairy; leaves linear-lanceolate, acute; calyx-segments foliaceous, much longer than the petals. *Beck, Bot. p.* 49.

Lychnis Githago. *DC. Prodr.* 1. *p.* 387.

Vulgò—Cockle. Corn Cockle. Rose Campion.

Gall.–La Nielle des Blés. *Germ.*–Der Korn-raden. *Hisp.*–Neguillon.

Plant pale glaucous green, clothed with long appressed hairs. *Root* annual? *Stem* 2 to 3 or 4 feet high, simple, dichotomously and paniculately branching at summit. *Leaves* 3 to 5 inches long, and 1 third to half an inch wide, scabrous, fringed with long hairs, sessile, and connate by a scabrous membrane. *Peduncles* 4 to 8 or 10 inches long, stout, leafless. *Calyx* ovoid-oblong, 10-ribbed; segments an inch to an inch and half long, linear-lanceolate, resembling the leaves. *Petals* violet purple; lamina obovate, emarginate. *Capsule* ovoid, about 3 fourths of an inch long, and near half an inch in diameter. *Seeds* numerous, somewhat cochleate-obovoid, angular, muricately ribbed, dark purple, or finally purplish black.

Hab. Cultivated fields; chiefly among wheat and rye: frequent. *Fl.* June. *Fr.* July.

Obs. This foreigner, although diligently rooted out by all neat farmers, maintains its ground obstinately in our wheat fields. The *seeds*, when abundant among wheat, are injurious to the quality and appearance of the flour. This is called an *annual*, in the books,—and it certainly lives but one year; yet it approaches the biennials by the growth of radical leaves in autumn, and living through the winter which precedes its flowering. There are no native species in the U. States.

223. PENTHORUM. *L.* *Nutt. Gen.* 421.

[Gr. *Pente*, five, and *Oros*, a column; alluding to the 5 conic beaks of the capsule.]

Calyx 5-parted. *Petals* 5, or 0. *Carpels* 5, superior, connate at base, forming a 5-beaked 5-celled capsule; cells opening transversely on the inner side of the beaks. *Seeds* numerous, minute.

Herbaceous: leaves alternate, membranaceous; flowers in terminal cymose racemes. *Nat. Ord.* 147. *Lindl.* CRASSULACEÆ.

1. P. SEDOIDES, *L.* Stem mostly branched, and angular above; leaves lanceolate, acute, serrate, subsessile; racemes secund, simple, cymose, spreading, at first recurved. *Beck, Bot. p.* 133.

SEDUM-LIKE PENTHORUM. *Vulgò*—Virginian Stone-crop.

Root perennial. *Stem* 12 to 18 inches high, erect, terete below, angular above, with a few axillary branches, smooth, except on the angles. *Leaves* 2 to 4 inches long, and 3 fourths of an inch to an inch wide, acute at each end, acutely and unequally serrate, smooth, on very short petioles. *Racemes* somewhat spiked, 1 to 2 inches long, revolute at apex, yellowish green; *peduncles* and *pedicels* scabrous-pubescent. *Calyx* somewhat adnate to the base of the ovary; segments ovate, acute, denticulate. *Petals* mostly 0. *Stamens* longer than the calyx, inserted at

the base of the ovary; *anthers* often purple. *Capsule* with 5 ovoid acuminate spreading lobes, beaked by the short persistent styles. *Seeds* obovoid-elliptic, acute at base, scabrous, pale straw-color.

Hab. Swampy rivulets, and ditches: frequent. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. The only species of the genus in the U. States.

224. SEDUM. *L. Nutt. Gen.* 422.

[Latin, *sedo*, to sit; the plants often apparently sitting on naked rocks.]

Calyx mostly 5-parted, or rather 5-sepalled; sepals often turgid and leaf-like. *Petals* mostly 5. *Stamens* twice the number of the petals. *Carpels* 5, superior, opening on the inner side, each with a nectariferous scale at base. *Seeds* numerous.

Herbaceous and fleshy, or suffruticose: leaves alternate, or subverticillate, flat, or terete; flowers mostly terminal and cymose. *Nat. Ord.* 147. CRASSULACEÆ.

1. S. TERNATUM, *Mx.* Creeping; assurgent; leaves flat, the lower ones spatulate-obovate, ternately verticillate, the upper ones lance-oblong, scattered; cymes terminal, mostly 3-spiked; flowers generally octandrous, with a solitary decandrous one in the bosom of the spikes. *Beck, Bot. p.* 133.

S. portulacoides. *Muhl. Catal. p.* 46.

TERNATE SEDUM. *Vulgò*—Stone crop. Purslane-leaved House-leek.

Root perennial. *Stem* 2 to 4 or 5 inches long, assurgent, somewhat scabrous with minute elevated white scales. *Leaves* half an inch to an inch long, and one fourth of an inch to half an inch wide, entire, fleshy, the lower ones spatulate-ovate, or obovate, sometimes nearly rhomboid, tapering at base almost to a petiole; the upper ones lance-oblong, obtuse, sessile,—all of them a little produced at the base. *Flowers* sessile, bracteate and secund,—usually in 3 spreading or recurved *spikes*, of 1 to 3 inches in length, arranged verticillately at the summit of the stems, with a single sessile flower in the centre. *Sepals* linear-oblong, obtuse. *Petals* white, lance-linear, about twice as long as the sepals. *Stamens* shorter than the petals; *filaments* smooth, dilated at base; *anthers* sagittate-cordate, purplish black. *Carpels* often 4, ovoid-oblong, acuminate by the persistent styles. *Seeds* elliptic-obovoid, longitudinally striate with ferruginous ribs.

Hab. Shaded rocky banks of streams; Ridley creek: rare. *Fl.* May. *Fr.* June.

Obs. The *sepals* and *petals* are mostly 4, and the *stamens* 8, in all the flowers except the central one at the base of the spikes. This is a rare plant with us; and has only been found in the above locality,—where it was collected by Mr. GEORGE W. HALL, in 1832. Three or four additional species are enumerated in the U. States.

[Oxalis. Geranium. *Monadelphia Decandria.*]

Order 5. Decagynia.

225. PHYTOLACCA. *L. Nutt. Gen.* 424.

[Gr. *Phyton*, a plant, and *Lachanon*, a pot-herb; the young shoots being so used.]

Perianth corolla-like, deeply 5-parted, or rather 5-petalled. *Ovary* superior. *Berry* 10-celled, 10-seeded.

Herbaceous, or rarely fruticose: leaves alternate, without stipules; flowers racemose; racemes often opposite the leaves. *Nat. Ord.* 154. *Lindl.* PHYTOLACCEÆ.

1. P. DECANDRA, *L.* Leaves lance-ovate, acute at each end; stamens and styles 10. *Beck, Bot. p.* 299.

DECANDROUS PHYTOLACCA. *Vulgò*—Poke. Poke weed. Pigeon berry. *Gall.*–Morelle á grappes. *Germ.*–Kermesbeere. *Hisp.*–Yerba carmin.

Root perennial, large, fusiform and branching. *Stem* 4 to 6 feet high, and often an inch or more in diameter, branching, terete, or obtusely ridged below the petioles and branches, finally purple. *Leaves* 4 to 8 or 10 inches long, and 2 or 3 to 5 inches wide, lance-ovate or ovate-oblong, acute or acuminate, entire, thin, smooth, or roughish dotted, on *petioles* half an inch to 2 inches or more in length. *Racemes* 3 to 6 inches long, simple, slightly scabrous, mostly opposite the leaves, on angular peduncles 2 to 4 inches in length; pedicels about half an inch long, divaricate, each with a subulate *bract* at base, and usually with 2 smaller sub-opposite *bracts* near the middle. *Perianth* white; segments ovate, persistent. *Stamens* nearly as long as the perianth; *anthers* yellowish white. *Ovary* depressed, orbicular, obtusely 10-ribbed, green; *styles* very short; *stigmas* recurved. *Berries* depressed-globose, umbilicate, obscurely furrowed and ribbed, dark purple and juicy when mature. *Seeds* compressed, roundish-reniform purplish black, smooth and shining.

Hab. Rich banks; borders of woods, &c. frequent. *Fl.* June–Sept. *Fr.* Aug.–Oct.

Obs. The *young shoots* of this are much used, and esteemed, in the spring, as a substitute for Asparagus. The *root* is said to be actively emetic; and the tincture of the *ripe berries* has long been a popular remedy for chronic rheumatism. The mature berries, moreover, have been found to be esculent, when prepared by the pastry cook, in the form of pies. The only species in the U. States.

CLASS XI. ICOSANDRIA.*

Order 1. Monogynia.

OVARY SUPERIOR. **a.** *Fruit a Capsule.*

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* I have not retained the name (CALYCANDRIA) proposed for this Class, in my Catalogue,—because, although I still think it appropriate, I am apprehensive the attempt to supersede the long established, well understood, and universally received name, given by *Linnæus*, would be productive of more confusion than benefit. I avail myself of this occasion, however, in justice to myself, as well as to a distinguished Botanist of Europe, to notice a curious coincidence in the proposal of the name *Calycandria*. When I began to arrange the materials for my Catalogue, in 1813, that name (which, to be sure, is a very obvious one,) occurred to me, as more expressive of the character of the Class to which it is applied. I submitted it to my friend, the late Dr. *Baldwin*, who approved of it,—and I adopted it. Four years after my Catalogue was published—viz. in 1830—I accidentally learned, for the first time, that the identical name,—and also the arrangement of the Class *after* Polyandria,—had been proposed by M. *Richard*, Sen. of France, so early as the year 1807! I was much surprised, and felt somewhat flattered by the remarkable coincidence;—but at the same time was mortified by the apprehension, that those who might observe the circumstance, without knowing the facts, would very naturally conclude I had been perpetrating a despicable plagiarism. The affair, it is true, is of but little moment; yet I could not forego the opportunity, thus presented, of making an explanation.

226. CUPHEA *Jacq.* *Nutt. Gen.* 434.
[Greek, *Kuphos*, curved, or gibbous; in reference to the capsule.]

Calyx tubular, ventricose; limb dilated, unequally toothed. *Petals* about 6, unequal, inserted on the calyx. *Capsule* 1 or 2-celled, membranaceous, covered by the calyx, and, with it, bursting laterally. *Seeds* few, compressed, oval.

Herbaceous, or suffruticose: leaves opposite, entire; flowers axillary and terminal, sometimes racemose. *Nat. Ord.* 52. *Lindl.* SALICARIÆ.

1. C. VISCOSISSIMA, *Jacq.* Herbaceous; viscid-pubescent; leaves ovate-lanceolate, petiolate; flowers solitary, axillary, on short peduncles. *Beck, Bot. p.* 126. Icon, *Bart. Am.* 1. *tab.* 18.

MOST VISCID CUPHEA.

Root annual. *Stem* 9 to 18 inches high, erect, or sometimes decumbent at base, branched, clothed with a purplish clammy pubescence; branches axillary, alternate. *Leaves* 1 to near 2 inches long, and 1 third to near 3 fourths of an inch wide, sprinkled with very short hairs, somewhat repand and ciliate on the margin; *petioles* 1 fourth to half an inch long, pubescent. *Calyx* about half an inch long, very clammy, often purple, striate with 12 hairy ribs, gibbous at base on the upper side; tube ventricose, contracted at throat, with the limb more or less dilated, 6-toothed, and lined with purple hairs within. *Petals* violet purple, obovate, narrowed to a claw at base. *Stamens* 12, included; *filaments* very short, hairy, inserted in the throat of the calyx. *Ovary* oblong; *style* a little longer than the calyx, hairy; *stigma* subcapitate. *Capsule* about as long as the tube of the calyx, very thin and membranaceous, opening with the calyx its whole length, on the upper side, before maturity, and exposing the naked seeds. *Seeds* lenticular, nearly oval, minutely puncticulate, yellowish brown.

Hab. Gravelly old fields; roadsides: frequent. *Fl.* Aug. *Fr.* September.

Obs. The only species in the U. States.

b. *Fruit a Drupe.*

227. PERSICA. *Tournef. DC. Prodr.* 2. *p.* 531.
[A name derived from *Persia*; its native country.]

Calyx tubular, 5-cleft, deciduous. *Petals* 5. *Drupe* tomentose, or smooth, fleshy; *nut* somewhat compressed, ovate, acute, rugosely sulcate, and perforated, on the surface.

Small trees: leaves lanceolate, alternate, stipular, conduplicate when young; flowers preceding the leaves, subsessile, solitary. *Nat. Ord.* 75. *Lindl.* AMYGDALEÆ.

1. P. VULGARIS, Mill. *Serratures of the leaves all acute; fruit tomentose.* DC. Prodr. 2. p. 531.
Amygdalus Persica. Willd. Sp. 2. p. 982. Pers. Syn. 2. p. 33. Florul. Cestr. p. 125. Lindl. Ency. p. 420. Eat. Man. p. 16. *var. a.* Ait. Kew. 3. p. 194.

COMMON PERSICA. Vulgò—*Peach. Peach tree.*

Gall.—*Pêcher.* Germ.—*Der Pfirschenbaum.* Hisp.—*El Melocotón.*

Stem 8 *to* 12 *feet high, branching.* Leaves 3 *to* 5 *inches long, and an inch to an inch and half wide, oblong-lanceolate, acute or acuminate, smooth, with one or two glands at base on each side of the petiole;* petioles *about half an inch long.* Calyx

with a short tube; segments *spreading, obtuse, externally villose.* Petals *pale red, or purple.* Drupe *roundish-oval, mostly umbilicate at base, large* (1 *to* 2 *inches in diameter), fleshy and succulent, whitish, or yellow, with a purple blush, clothed with a dense tomentum.*

Hab. *Gardens, and Orchards: frequent.* Fl. *April.* Fr. *Aug.—September.*

Obs. *There are numerous* varieties *of this delicious fruit cultivated; but unfortunately, the tree is generally so short-lived that very few, except amateurs, are persevering enough to keep up a supply, even for domestic use. The plan proposed by* D. Townsend, Esq. *of engrafting on the* Apricot, *and* Plum (See Florul. Cestr. p. 125.), *appeared to promise much, for a few years; but did not prove to be an effectual preservative.*

2. P. lævis, DC. *Serratures of the leaves all acute; fruit smooth.* DC. Prodr. 2. p. 531.

Amygdalus Persica, var. *nucipersica.* Willd. Sp. 2. p. 982. Pers. Syn. 2. p. 33. *var. b. nectarina.* Ait. Kew. 3. p. 194. Lindl. Ency. p. 420.

Smooth Persica. Vulgò—*Nectarine.*

Gall.—*Brugnon.* Germ.—*Nektar-pfirschenbaum.* Hisp.—*Abridór.*

Hab. *Gardens: not common.* Fl. *April.* Fr. *August.*

Obs. *This is scarcely to be distinguished from the preceding, except by its* fruit; *and has generally been considered only a* variety. *It is occasionally cultivated by those who are curious in choice fruit; but is even more difficult and uncertain than the Peach. Among the* varieties *of these two species, the most remarkable are those in which the* mesocarp, *or fleshy portion of the drupe, adheres closely to the nut* (*called* Clingstone), *and those in which it readily separates from the nut* (*called* Free stone). *The foregoing are the only species of the genus, as now constituted.*

228. ARMENIACA. *Tournef. DC. Prodr. 2. p. 531.*

[Derived from *Armenia*; the native country of the tree.]

Calyx campanulate, 5-cleft, deciduous. *Petals* 5. *Drupe* softly pubescent, fleshy; *nut* compressed, smooth, with one margin obtuse, the other acute, both sulcate.

Small trees: leaves subcordate, or ovate, alternate, stipular, convolute when young; flowers preceding the leaves, sessile, or pedicellate, solitary, or 2 or 3 from a bud. *Nat. Ord. 75. Lindl.* Amygdaleæ.

1. A. vulgaris, Lam. *Leaves orbicular-ovate, acuminate, dentate-serrate, subcordate at base; stipules palmate; flowers sessile.* DC. Prodr. 2. p. 532.

Prunus Armeniaca. Willd. Sp. 2. p. 989. Ait. Kew. 3. p. 197. Lindl. Ency. p. 422.

Common Armeniaca. Vulgò—*Common Apricot.*

Gall.—*L'Abricotier.* Germ.—*Der Aprikosenbaum.* Hisp.—*Albaricóque.*

Stem 10 *to* 15 *feet high, branching.* Leaves 2 *to* 3 *or* 3 *and a half inches long, and about as wide as long, with a short abrupt acumination, dentate-serrate, smooth;* petioles *an inch to an inch and half long, with* 2 *or* 3 *to* 5 *or* 6 *tuberculate cup-like* glands *on the upper side, near the base of the leaf, and* 2 *or* 3 buds *crowded in each axil.* Flowers *sessile, or subsessile.* Petals *white.* Drupe *roundish-oval, somewhat compressed, near an inch in diameter, yellowish with a purple blush, clothed with a fine soft tomentum.*

Hab. *Gardens, &c. not common.* Fl. *April.* Fr. *July—August.*

Obs. *Several* varieties *of this are cultivated, under the names of* Moor Park, Brussels Apricot, &c. *The young fruit is so liable to be destroyed by the puncture of insects, that it is a very uncertain crop, with us.*

2. A. DASYCARPA, DC. *Leaves ovate, acuminate, doubly-serrate; petioles glandular; flowers pedicellate.* DC. Prodr. 2. p. 532.
A. sibirica, var. *dasycarpa*. Pers. Syn. 2. p. 36.
Prunus dasycarpa. Willd. Sp. 2. p. 990. Lindl. Ency. p. 424.

HAIRY-FRUITED ARMENIACA. Vulgò—*Black Apricot.*

Stem 10 *to* 15 *feet high, branching; branches rather slender and virgate.* Leaves *an inch and half to near* 3 *inches long, and* 1 *to* 2 *inches wide, smooth above, pubescent on the midrib and in the axils of the nerves beneath;* petioles *half an inch to an inch long, pubescent on the upper side, and generally with one or two glands near the base of the leaf.* Flowers *on pubescent pedicels,* 1 *fourth to* 1 *third of an inch long.* Calyx-segments *ovate, obtuse, serrulate, mostly dark purple.* Petals *white, obovate.* Drupe *subglobose, nearly an inch in diameter, conspicuously pubescent, dark purple when mature.*

Hab. *Gardens, &c. not common.* Fl. *April.* Fr. *July.*

Obs. *This has more of the habit of a* Plum tree *than the preceding,—and is considered more hardy and certain to bear fruit: But neither of them has been attended with much success, here, so far as my observation goes. The foregoing, I believe, are the only species cultivated in the U. States.*

229. PRUNUS. *L. Nutt. Gen.* 431.

[The Latin name for the Plum.]

Calyx campanulate, 5-cleft, deciduous. *Petals* 5. *Drupe* ovoid, or oblong, very smooth, mostly covered with a glaucous powder, or bloom, fleshy; *nut* compressed, acute at each end, smooth, with the margins subsulcate.

Small trees: leaves oval, or lance-ovate, alternate, stipular, convolute when young; flowers mostly preceding the leaves; pedicels subsolitary, or in umbellate fascicles. *Nat. Ord.* 75. *Lindl.* AMYGDALEÆ.

1. P. DOMESTICA, L. *Unarmed; leaves lance-ovate, or oval, mostly acute; pedicels subsolitary; fruit oval, ovoid, or obovoid.* DC. Prodr. 2. p. 533.

DOMESTIC PRUNUS. Vulgò—*Common Plum. Damascene, Gage, &c.* Gallicé—*Prunier.* Germ.—*Der Pflaumenbaum.* Hisp.—*Ciruélo.*

Stem 8 *to* 12 *or* 15 *feet high, branching; branches not spinose.* Leaves 1 *to* 3 *inches long, and* 3 *fourths of an inch to* 2 *inches wide, variable in form and size, sometimes obtuse and a little emarginate, serrate, smoothish, when young often densely pubescent near the base of the midrib, and pilose on the nerves beneath;* petioles *half an inch to an inch or more in length, pubescent on the margin;* stipules *cuneate-oblong, often trifid at apex, pubescent-ciliate.* Flowers *rather preceding the leaves, subsolitary, or in pairs, from a flowering bud;* pedicels *about half an inch long, pubescent.* Calyx-segments *oblong, obtuse, slightly ciliate.* Petals *white, orbicular-obovate.* Drupe *of various forms and sizes, from oval to ovoid, obovoid, and subglobose, half an inch to an inch or more in diameter, covered with a fine bluish-white powder, or bloom, when mature, of various colors, from black to copper-color, and pale greenish yellow, with a rather firm fleshy pulp.*

Hab. *Gardens; yards, &c. frequent.* Fl. *April.* Fr. *August.*

Obs. *Numerous* varieties *of this are cultivated, here; but, with the exception of the* Damascene, *or* black plum, *the crop of fruit is very uncertain.*

2. P. AMERICANA, *Marsh.* Subspinose; leaves oval and obovate, acuminate, sharply and often doubly serrate; umbels subsessile, 2 to 5 flowered; fruit roundish-oval. *Beck, Bot. p.* 95. Icon, *Ann. Lyc. N. Y. vol.* 3.

P. nigra (americana). *Muhl. Catal. p.* 48. Not? of *Willd. Pers. Ait. &c.*

P. hiemalis? *Mx. Am.* 1. *p.* 285. *Pers. Syn.* 2. p. 35. *Nutt. Gen.* 1. *p.* 302. *Ell. Sk.* 1. *p.* 542. Not? of *Muhl. Pursh*, nor? *Lindl.*

Cerasus hyemalis? *DC. Prodr.* 2. *p.* 538. *Hook. Am.* 1. *p.* 168. Also? *Beck, Bot. p.* 96.

AMERICAN PRUNUS. *Vulgò*—Red Plum. Yellow Plum.

Stem 8 to 12 or 15 feet high, much branched; young branches virgate, the old ones rough and rugged, subspinose. *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, varying from oblong-ovate to oval, and obovate, strongly acuminate, pubescent beneath when young, finally smoothish, serrate, serratures acuminate; *petioles* 1 fourth to half an inch long, sulcate and pubescent on the upper side, and generally but not constantly with 2 glands near the base of the leaf; *stipules* mostly 3-parted, segments lance-linear, often longer than the petioles, fringed with setaceous gland-bearing teeth. *Flowers* preceding the leaves, in numerous fascicles, or umbels, of 2 to 5 (usually 3 or 4) from a bud; *pedicels* 1 third or near half an inch long, smooth. *Calyx-segments* linear-lanceolate, rather obtuse, often with 2 or 3 minute teeth at apex, pubescent. *Petals* white, obovate, very obtuse, often crenulate at apex. *Drupe* oval, or subglobose, half an inch to an inch in diameter, mostly reddish orange-color when mature, nearly destitute of bloom, with a softish or succulent yellow pulp, and a thick coriaceous skin.

Hab. Banks of streams; meadows; fence-rows, &c. frequent. *Fl.* April. *Fr.* Aug.

Obs. The fruit of this is much improved, both in size and quality, by culture. In its wild state, the flowers are often abortive. There have been some strange misnomers, and mistakes, about this plum,—if it be really the one intended by P. *nigra*, and P. *hiemalis*, of Authors. When my Catalogue was published, I thought it could not have been described by any Botanist, except *Marshall*,—and that it must be very circumscribed in its habitat; but I have since ascertained that it is quite common throughout Pennsylvania,—and probably to a much greater extent.

3. P. CHICASA, Mx. *Subspinose; leaves narrow-lanceolate, or oblanceolate, acute, finely serrulate; umbels sessile, 2 to 3-flowered; fruit globose.* Mx. Am. 1. p. 284.

P. angustifolia. Marsh. Arbust. p. 111.

Cerasus Chicasa. DC. Prodr. 2. p. 538. Hook. Am. 1. *p.* 168.

CHICASAW PRUNUS. Vulgò—*Chicasaw Plum. Mountain Cherry.*

Stem 8 *to* 10 *or* 12 *feet high, much branched; young branches virgate, smooth and shining, dark purple, the older ones crooked, or geniculate, forming a bushy head, subspinose from abortive branchlets.* Leaves 1 *to* 2 *inches long, and* 1 *third to* 3 *fourths of an inch wide, mostly acute, smooth, or with a slight pubescence along the midrib beneath, serratures minute, with transparent gland-like points;* petioles *slender,* 1 *fourth to* 3 *fourths of an inch long, often with* 1 *or* 2 *glands near the base of the leaf, pubescent when young;* stipules *linear, glandular-serrate.* Flowers *appearing with the leaves, in lateral closely sessile umbels of about* 3 *from a bud;* pedicels *about half an inch long, slender, smooth.* Calyx-segments *lance-oblong,*

obtuse, nearly smooth. Petals *white, obovate.* Drupe *globose, half an inch to near 3 quarters in diameter, red, or yellowish red, when mature, nearly or quite destitute of bloom, with a tender and rather succulent pulp, and a thin skin.*

Hab. *Gardens: not common.* Fl. *April.* Fr. *July.*

Obs. *The fruit of this is very pleasant; and worthy of more attention than it has yet received, in this County. It approaches the* Cherry *somewhat, in character; and, with the preceding (if I have not erred in the synonyms), has been transferred to that genus, by Professors* De Candolle *and* Hooker. *The* habit *of the plants, however, I still think is decidedly that of* Prunus. *Three or four additional species of genuine Prunus are enumerated as natives of the U. States; but the whole family requires a careful revision.*

230. CERASUS. *Juss. DC. Prodr.* 2. *p.* 535.

[Latin, *Cerasus*, a cherry; the name of an Asiatic town,—whence it was derived.]

Calyx campanulate, 5-cleft, deciduous. *Petals* 5. *Drupe* globose, or roundish-ovoid, often umbilicate or subcordate at base, very smooth, destitute of bloom, succulent; *nut* subglobose, smooth.

Trees: leaves obovate, oval, or oblong, alternate, stipular, conduplicate when young; flowers in umbellate fascicles rather preceding the leaves, or racemose and accompanying the leaves. *Nat. Ord.* 75. *Lindl.* AMYGDALEÆ.

† *Flowers umbellate;—from the buds.*

1. C. VULGARIS, Mill. *Branches spreading; leaves obovate, and lance-ovate, mostly narrowed at base, acuminate or acute, smoothish; umbels subsessile; flowers rather preceding the leaves; fruit globose; pedicels rather short.*

C. Caproniana? DC. Prodr. 2. p. 536.

Prunus Cerasus. Ait? Kew. 3. p. 198. Muhl. Catal. p. 48. Lindl. Ency. p. 422. Eat. Man. p. 286. *var. caproniana?* Willd. Sp. 2. p. 991. also? *var. austera.* Willd. l. c. Pers. Syn. 2. p. 35.

COMMON CERASUS. Vulgò—*Red or Sour Cherry. Morello Cherry.* Gallicé—*Le Cerisier.* Germanicé—*Der Kirschbaum.* Hisp.—*Cerézo.*

Stem 12 *to* 15 *or* 20 *feet high, irregularly branching; branches rather slender and weak, spreading nearly horizontally, forming a roundish bushy top.* Leaves *an inch and a half to* 3 *inches long, and an inch to near* 2 *inches wide, when young densely pubescent along the midrib beneath, finally smoothish, doubly or unequally serrate, mostly with* 2 *glands at base;* petioles *half an inch to an inch long, smoothish;* stipules *cuneate-oblong, often trifid at apex, serrate.* Flowers *rather in advance of the leaves, in subsessile umbels of* 2 *or* 3 *from a bud, seated on very short lateral spurs;* pedicels *half an inch to an inch long.* Calyx-segments *obovate-oblong, obtuse, spreading, finely serrate-dentate, and subciliate.* Petals *white, roundish-obovate, mostly entire.* Drupe *globose, rather large (one half to* 2 *thirds of an inch in diameter), red, or dark purple, when mature.*

Hab. *About houses; along fences, lanes, &c. frequent.* Fl. *April.* Fr. *July.*

Obs. *The fruit of the common* Sour Cherry *is extensively used by the pastry cook, in domestic economy, and is one of the most valuable varieties,—the tree being hardy, and a constant bearer. The* Morello Cherry (*var.* griotta? DC.) *is also a much esteemed variety; but, for the last five and twenty years, the tree has been so subject to disease, from the operations of insects in the branches (causing large warty protuberances), that it rarely produces any fruit.* Prof. De Candolle *appears to refer the* May-duke Cherry (*var.* Montmorencyana?) *to this species: But,*

although the fruit *approaches the common* Sour Cherry *in form, the* habit *of the tree, I think, decidedly inclines to the following. The same remark may be made of the* Carnation Cherry, *and perhaps of some other varieties.*

2. C. AVIUM, Mœnch. *Branches erect, or ascending; leaves obovate-oblong, or oval, acuminate, pilose beneath; umbels sessile; flowers scarcely preceding the leaves; fruit roundish-ovoid, or subcordate at base; pedicels longish.* DC. Prodr. 2. p. 535.

Also? *C. duracina,* and *C. juliana.* DC. l. c.

Prunus Cerasus, var. *juliana?* Willd. Sp. 2. p. 991. Pers. Syn. 2. p. 35.

P. avium. Muhl. Catal. p. 48. Lindl. Ency. p. 422. Eat. Man. p. 286. *Also,* var. *duracina,* and *Bigarella.* Willd. l. c. Pers. l. c.

BIRDS' CERASUS. Vulgò--*English Cherry. Bleeding-heart. Ox-heart.*

Stem 25 *to* 50 *or* 60 *feet high, and often* 2 *to* 3 *feet in diameter at base, branching regularly, and somewhat verticillately; branches stout, erect, or ascending, forming an oblong conical top.* Leaves 3 *to* 5 *or* 6 *inches long, and* 2 *to* 3 *inches wide, abruptly acuminate, doubly and rather coarsely serrate-dentate, smooth above, except a minute bristly pubescence on the nerves, pilose beneath, particularly along the nerves;* petioles *an inch to an inch and half long, smoothish, generally with* 2 *oblong glands near the base of the leaf; stipules oblong, often trifid at apex, serrate, pilose externally.* Flowers *sub-coetaneous, or nearly contemporary with the leaves, in sessile umbels of about* 3 *from a bud, seated on lateral spurs of the* 2-*years old branches;* pedicels *slender, an inch to an inch and half long.* Calyx-segments *ovate-oblong, often rather acute, reflexed, nearly entire and smooth.* Petals *white, obovate-oblong, mostly emarginate.* Drupe *roundish-oval, or ovoid, a little compressed, often umbilicate, or subcordate at base, succulent, or often rather firm and fleshy, black, red, or mottled, when mature.*

Hab. *About houses; roadsides, &c. frequent.* Fl. *April.* Fr. *June—July.*

Obs. *This seems to be the* original stock *of the numerous improved* varieties *of cultivated cherry.* Prof. De Candolle, *if I understand him correctly, makes* 3 *species of what appear to me to belong to this one. The* fruit, *it is true, presents some striking differences; but, if the* Morello *and common* Red Cherry *can be properly thrown together as one species, I do not see why the same may not be done with these. I apprehend that in the grouping of cultivated plants, it is safer to be governed by their general habit, rather than by the quality or appearance of the fruit; the latter, I think, being more liable to modification by culture than the former.*

†† *Flowers racemose;—from the branches.*

3. C. VIRGINIANA, *Mx.* Leaves oblong-oval, or lance-oblong, acuminate, smooth on both sides, shining above, serrate; serratures nearly equal, short, incurved, mucronate; petioles with 2 to 4 glands; racemes erect, elongated. *Beck, Bot. p.* 97. ICON, *Mx. f. Sylva.* 2. *tab.* 88.

Prunus-Cerasus virginiana. *Marsh. Arbust. p.* 112.

Prunus virginiana. *Willd. Sp.* 2. *p.* 985. *Pers. Syn.* 2. *p.* 34. *Muhl. Catal. p.* 48. *Pursh, Am.* 1. *p.* 329. *Nutt. Gen.* 1. *p.* 302. *Bart. Phil.* 1. *p.* 222. *Ell. Sk.* 1. *p.* 540. *Bigel. Bost. p.* 192. *Torr. Fl.* 1. *p.* 467. *Ejusd. Comp. p.* 198. *Lindl. Ency. p.* 422. *Eat. Man. p.* 284.

VIRGINIAN CERASUS. *Vulgò*—Wild Cherry.

Stem 30 to 50 or 60 feet high, and often 2 feet or more in diameter at base, with irregular spreading branches. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, shining green above, paler beneath, the serratures appressed or incurved, with a minute callous point; *petioles* half an inch to 3 quarters in length, smooth, mostly with 2 to 4 glands near the leaf (sometimes but 1, and occasionally none). *Flowers* in simple lateral racemes, from the branches of the preceding year; *common peduncle* 1 to 2 inches long, often bearing 1, 2, or 3 leaves; *raceme* 2 to 4 inches long, smooth; *pedicels* 2 to 4 lines long, spreading. *Calyx-segments* short, acute, erect, smooth. *Petals* white, orbicular-obovate. *Drupe* globose, small (2 or 3 lines in diameter), dark purple, or purplish black, when mature, bitter and mawkish to the taste.

Hab. Fence-rows; banks of streams, &c. frequent. *Fl.* May. *Fr.* August.

Obs. The *wood* of this is variegated, close-grained and hard, taking a good polish; and is much used by Cabinet-makers. The *bark* is a rather unpalatable, but valuable tonic,—especially in those cases of debility which often succeed catarrhal affections. The *leaves* are a favorite food of caterpillars, and the trees are often completely stript by those voracious animals. Prof. *Hooker* doubts whether this and the C. *serotina* are really distinct. They certainly have a strong resemblance; but Dr. *Torrey* has noted the true distinction between them,—especially with respect to the *serratures* of the leaves,—which in C. *serotina* are more spreading, unequal, and acuminate, and approach nearer the C. *Padus*, of Europe, than in our C. *virginiana*. The *pubescence* along the midrib, beneath, is not entirely to be relied on; as it occurs occasionally in our plant. Four or five additional species are enumerated in the U. States; but, like the *Plums*, they require a revision,—and can only be settled by a careful Monograph.

[Cratægus crus galli, and C. oxyacantha, *in the following order.*]

Order 2. Di-Pentagynia.

a. Ovary inferior: *Fruit a Pome.*

231. CRATÆGUS. *L. Nutt. Gen.* 437.

[Greek, *Kratos*, strength; in allusion to the strength, or firmness of the wood.]

Calyx with the tube adnate to the ovary, urceolate; limb 5-cleft. *Petals* 5, orbicular, spreading. *Ovary* 1 or 2 to 5-celled. *Styles* 1 or 2 to 5, smooth. *Pome* subovoid, fleshy, or somewhat farinaceous, closed by the teeth of the calyx, or incrassated disk, 1 or 2 to 5-celled; cells bony, 1-seeded.

Small trees, or shrubs: spinose; leaves alternate, stipular, simple, serrate, or angulate-lobed; flowers mostly in terminal corymbs; bracts subulate, deciduous. *Nat. Ord.* 74. *Lindl.* Pomaceæ.

* *Leaves serrate, not lobed.*

1. C. crus galli, *L.* Leaves obovate-cuneate, or lance-oval, subsessile, coriaceous, smooth, shining above; corymbs smooth; calyx smooth, segments lanceolate, subserrate; styles 2, or often solitary. *Beck, Bot. p.* 111. var. *a.* splendens, *and* var. *b.* pyracanthifolia? *Ait. D C.*

Mespilus crus galli. *Also?* M. cuneiformis. *Marsh. Arbust. p.* 88.

Cockspur Cratægus. *Vulgò*—Cockspur Thorn. New Castle Thorn.

Stem 8 to 12 or 15 feet high, much branched; branches virgate in the young plant, and often horizontal,—flexuose and finally rugged in the old,—armed with long sharp gradually-tapering thorns (2 to near 3 inches in length), which are rather slender, and clothed with small glandular-serrate leaves, when young. *Leaves* 1 to 2 and a half inches long, and half an inch to an inch or inch and half wide,—in *var. a.* generally obovate-cuneate, and subsessile,—in *var. b.* often lance-oblong, lance-oval, or obovate, with *petioles* 1 fourth to 1 third of an inch long,—mostly acute, or subacuminate, sometimes obtuse and rounded at apex, unequally serrate, smooth on both sides, deep green and shining on the upper surface, paler or glaucous and reticulately veined beneath, nearly entire and tapering cuneately at base; *stipules* linear-lanceolate, glandular-serrate. *Corymbs* compound, many-flowered, terminal on the short spurs; *peduncles* often trichotomous at summit. *Calyx-segments* linear-lanceolate, glandular-serrate (especially in *var. b.*), often nearly entire. *Petals* white. *Styles* sometimes 2, but more frequently solitary. *Fruit* middle-sized (ovoid-oblong, and pyriform at base, in *var. b.*), reddish brown when mature.

Hab. Fence-rows; R. Strode's, &c. not very common. *Fl.* June. *Fr.* October.

Obs. We have, I think, two pretty distinct *varieties* of this, as designated above. *Var. b.* occurs near Wistar's bridge, on the Brandywine, and also near Mechem's Mill, on the Valley creek. *Var. a.* which is more common, is much employed for *hedging*, in New Castle County, Delaware; and I believe will ultimately be found, with proper management, to make a more durable and effective hedge than the C. *cordata*, or Washington Thorn,—which is now generally used in this County. It is a more rugged plant, and seems to be less liable to disease, or to be injured by insects, than the Washington Thorn.

2. C. PARVIFOLIA, *Ait.* Leaves obovate-cuneate, rounded at apex, crenate-serrate, subsessile, pubescent; flowers subsolitary; calyx villose, segments subfoliaceous, lance-oblong, incised-serrate; styles 5. *Beck, Bot. p.* 111 (erroneously printed C. "*parviflora*").

C. tomentosa. *Mx. Am.* 1. *p.* 289.

C. spathulata? *Bart. Phil.* 1. p. 226. Not of *Mx.* &c.

Mespilus axillaris. *Pers. Syn.* 2. *p.* 39.

SMALL-LEAVED CRATÆGUS.

Stem 3 to 5 feet high, much branched; branches armed with a few sharp thorns half an inch to an inch long, pubescent when young, and somewhat scabrous, or verrucose. *Leaves* 3 fourths of an inch to an inch and half long, and half an inch to an inch wide, generally broad and rounded at apex, coarsely and rather obtusely dentate-serrate, thickish and coriaceous, pubescent on both sides, roughish but shining green on the upper surface, paler beneath. *Flowers* mostly solitary and terminal on the short lateral branches; *peduncles* 1 fourth to 1 third of an inch long. *Calyx* tomentose; *segments* longer than the ovary, serrate. *Petals* white. *Fruit* roundish-obovoid, or sub-turbinate, 1 third to near half an inch in diameter, 5-seeded, somewhat hairy, pale greenish yellow when mature, esculent.

Hab. Great Valley, near Brooke's Mill: rare. *Fl.* May. *Fr.* September.

Obs. This rugged little bush was detected in the above locality by Mr. JOSHUA HOOPES, in 1835. It is abundant in New Jersey; but very rare in Chester County.

3. C. PUNCTATA, *Jacq.* Leaves cuneate-obovate, unequally or doubly incised-serrate, sub-plicate, narrowed at base to a petiole, hairy on the nerves beneath; corymbs pubescent; calyx subvillose, segments linear-subulate, mostly entire; styles 2 or 3. *Beck, Bot. p.* 111.

C. glandulosa. *Florul. Cestr. p.* 62. Not of *Willd.* nor *Mx.* Mespilus Azarolus major? *Marsh. Arbust. p.* 88.

Dotted Cratægus. *Vulgò*—Thorn-bush.

Stem 6 to 10 or 12 feet high, branched; branches rugged, covered with a cinereous bark, and mostly armed with stout sharp thorns 1 to 2 inches long, sometimes nearly destitute of thorns, the young branches villose. *Leaves* an inch and half to 3 inches long, and 1 to 2 inches wide, more or less obovate, mostly with a short acumination, doubly serrate, and often cut into small acute serrated lobes towards the apex, entire and tapering at base, hairy on both sides when young, particularly on the nerves beneath, smoothish and somewhat plicate when old; *petioles* 1 fourth to 3 fourths of an inch long, destitute of glands, pubescent at first, finally smoothish; *stipules* lanceolate, glandular-serrate, sometimes lobed. *Corymbs* compound, many-flowered, pubescent, often quite villose. *Calyx-segments* often glandular serrulate at first, finally entire. *Petals* white. *Styles* 3 or often 2, sometimes united below, hirsute at base. *Fruit* subglobose, large (one half to 2 thirds of an inch in diameter), and mostly 3-seeded, red, or sometimes yellow when mature, dotted, esculent, and not unpleasant to the taste.

Hab. Borders of woods; along Brandywine: not unfrequent. *Fl.* May. *Fr.* Sept.

Obs. The red-fruited variety has come more frequently under my notice; and I find the pome of that to be umbilicate at both ends. A specimen of this was mistaken for C. *glandulosa*, when my Catalogue was prepared.

* * *Leaves incised, and more or less lobed.*

4. C. flava? *Ait.* Leaves ovate, or obovate, mostly cuneate at base, sub-lobed and incised-serrate, smooth, decurrent on the petiole; petioles, stipules, bracts and calyx, glandular; styles 3 to 5. *DC. Prodr.* 2. *p.* 628.

C. glandulosa. *Mx? Am.* 1. *p.* 285. *Muhl? Catal. p.* 48. *Nutt. Gen.* 1. *p.* 305. *Florul. Cestr. suppl. p. xv* (not of *p.* 62.). Not? of *Willd. Beck, &c.*

C. Michauxii? *Pers. Syn.* 2. p. 38.

Yellow Cratægus. *Vulgò*—Black Thorn.

Stem 4 to 6 or 8 feet high, branching; branches armed with sharp thorns 1 to near 2 inches in length (sometimes the thorns have short opposite branches towards the point). *Leaves* 2 to near 3 inches long, and 1 to 2 inches wide, acute, serrate, and somewhat lobed, often with a more distinct lobe, or deeper incision near the base on each side, smooth; *petioles* half an inch to an inch long, more or less margined by the decurrence of the leaf, glandular on the margins; *stipules* of the young plant foliaceous, on short petioles, subreniform, with a falcate acumination on one side, unequally glandular-serrate. *Corymbs* terminal on the young branches, mostly few-flowered; *peduncles* smoothish, bracteate at base, and often with 2 or 3 alternate bracts near the flower; *bracts* spatulate-lanceolate, or lance-oblong, viscid and loosely tomentose, studded on the margin with globose pedicellate glands. *Calyx* smooth; *segments* oblong-lanceolate, longer than the ovary, somewhat pilose on the inner surface, incised-serrate, or laciniate, serratures tipped with glands. *Petals* white. *Styles* 3 to 5, often 4, distinct. *Fruit* obovoid, or pyriform, large (about half an inch in diameter), 3 or 4 seeded, greenish yellow with a tinge of dark red when mature, esculent, but rather insipid.

Hab. Borders of woods; fence-rows, &c. not very common. *Fl.* May. *Fr.* Sept.

Obs. Our plant does not exactly agree with the descriptions in the books; but seems to be identical with the C. *flava*, in the herbarium of the Philadelphia Academy. The *leaves* have more resemblance to those of C. *coccinea*, than any of the others.

5. C. COCCINEA, *L.* Leaves ovate, acutely sub-lobed and incised-serrate, thin and smooth, on long slender petioles; petioles and calyx smoothish, and somewhat glandular; styles 3 to 5. *Beck, Bot. p.* 112.

CRIMSON CRATÆGUS. *Vulgò*—White Thorn.

Stem 6 to 10 or 12 feet high, with flexuose spreading rugged branches, armed with stout thickish acute thorns 1 to near 2 inches in length, and mostly a little curved downwards. *Leaves* about 2 or 2 and a half inches long, and 1 to near 2 inches wide, acute, incised-serrate, and cut into 3 or 4 small acute or acuminate angulate lobes on each side, abruptly narrowed (or often truncate and a little cordate) at base, thin, smooth, and of a lively green color; *petioles* 3 fourths of an inch to near an inch and half long, slender, nearly smooth, with a few small glands along the upper edges; *stipules* lance-linear, glandular-serrate. *Flowers* in corymbs, terminating the young short branches; *peduncles* at first a little pubescent, finally smoothish; *bracts* colored, lanceolate, or often spatulate-lanceolate, glandular-dentate, caducous. *Calyx* finally smoothish; *segments* linear-lanceolate, denticulate and glandular on the margins. *Petals* white, orbicular-obovate. *Styles* 5, or often 3, and sometimes 4. *Fruit* rather large (1 third to near half an inch in diameter), bright purple when mature, esculent.

Hab. Borders of woods, and thickets: frequent. *Fl.* May. *Fr.* September.

Obs. This is the most common species, with us. The thorns have more resemblance to a cock's spur, than those of the real C. *crus galli*. I have received from Mr. *Schweinitz* a specimen under the name of C. *viridis*, which I cannot distinguish from this one,—except that the petioles and peduncles are considerably pubescent.

6. C. CORDATA, Ait. *Leaves cordate-ovate, acuminate, incised and angulate-lobed, smooth; petioles and calyx destitute of glands; styles* 5. Beck, Bot. p. 112.

C. populifolia. Pursh, Am. 1. p. 337. Nutt. Gen. 1. p. 305. Florul. Cestr. p. 125. *Not? of* Walt. *and* Elliott.

CORDATE CRATÆGUS. Vulgò—*Washington Thorn.*

Stem 15 *to* 20 *feet high, branching; branches virgate, dark purple, armed with long slender gradually-tapering sharp thorns* (2 *to near* 3 *inches in length*). Leaves 2 *to* 3 *inches long, and* 2 *to* 2 *and a half inches wide, acuminately tapering to the apex, unequally incised-serrate, and cut into partial lobes, generally with a pretty distinct lobe on each side at the base, sometimes nearly equally* 3-*lobed like a maple leaf, more or less cordate at base, smooth, except on the midrib and nerves above, which are pilose;* petioles 3 *fourths of an inch to an inch long, slender, smoothish, not glandular;* stipules *of the young plant foliaceous, subreniform, lobed and glandular-serrate, one of the side-lobes at base falcate.* Corymbs *compound, many flowered, terminating the branches:* peduncles *smooth;* bracts *short, subulate, dentate, caducous.* Calyx *smooth;* segments *short, broad-ovate, abruptly acute* (*obtuse*, Authors), *slightly pubescent within, deciduous.* Petals *white.* Styles 5, *mostly united below, and often nearly to the stigmas.* Fruit *depressed-globose, small,* (*about* 1 *fourth of an inch in diameter*), *bright purple when mature.*

Hab. *Roadsides, and fields, in hedges: frequent.* Fl. *June.* Fr. *October.*

Obs. *This species was introduced into this County, from the neighborhood of Washington City, about the commencement of the present century,—and is now extensively used in hedging. It grows fast, in favorable situations, under good management,—and will make a handsome hedge in about ten years from the time of planting; but I have observed that it does not succeed well on dry rocky banks,—and especially in the* red shale *districts of our neighboring Counties of* Mont-

gomery *and* Bucks. *The young branches are often subject to disease, also, from the puncture of insects. I have used this Thorn to a considerable extent,—and have succeeded in obtaining some pretty fair hedges; but I am now strongly inclined to the opinion that the* C. crus galli, *or* Cock spur Thorn, *is entitled to the preference, for that object. One important fact, however, applies to every sort of Thorn,—and should be remembered by all persons who may undertake hedging,—which is, that if they are not carefully attended to, and skillfully managed, the hedges will become a nuisance, and a source of vexation, rather than a benefit,—and had better never be attempted. With due care and skill, they make a valuable and ornamental enclosure.*

7. C. OXYACANTHA, *L.* Leaves obovate-cuneate, laciniate-lobed, often trifid, smoothish, shining; petioles and calyx destitute of glands; styles 1 to 3. *Beck, Bot. p.* 112.

SHARP-THORNED CRATÆGUS. *Vulgò*—Hawthorn. English Thorn. *Gallicè*—L'Aubépine. *Germ.*—Der Hagedorn. *Hisp.*—Espina blanca.

Stem 8 to 12 feet high, much branched; branches rugged, armed with sharp tapering thorns about half an inch long. *Leaves* an inch to an inch and half long, and about as wide as long, cuneate, or sometimes ovate, and variously lobed, often 3 or 5-lobed, with the middle or terminal lobe trifid, somewhat pilose, deep shining green on the upper surface, paler beneath; *petioles* half an inch to an inch long, slender, smooth, or sparingly pilose; *stipules* of the young plant foliaceous, obliquely falcate-reniform, acuminate and mucronate on one side, coarsely serrate. *Corymbs* terminal on the short spurs. *Calyx* smoothish, or sometimes villose; *segments* lance-ovate, acute. *Petals* white. *Style* mostly solitary. *Fruit* ovoid, small (about 1 fourth of an inch in diameter), purple when mature.

Hab. Roadsides; fence-rows, &c. not common. *Fl.* May. *Fr.* October.

Obs. This species (of which there are several *varieties*, in Europe,) was introduced many years ago, and is apparently naturalized in a few localities; but does not seem to extend itself much. It is said to be the favorite Thorn for hedging, in England; but is rarely applied to that use, here. Some ten or twelve additional species have been enumerated in the U. States; but the genus stands greatly in need of a careful revision.

232. AMELANCHIER. *Medik. DC. Prodr.* 2. *p.* 632.

[An uncouth *French* name; which seems to be sanctioned by the best authorities.]

Calyx with the tube adnate to the ovary; limb 5-cleft. *Petals* 5, lance-oblong. *Ovary* 10-celled, or rather with 5 bipartite cells. *Styles* 5, subconnate at base. *Pome*, when mature, 3 to 5-celled; cells cartilaginous. *Seeds* 3 to 5.

Small trees, or shrubs: unarmed; leaves simple, alternate, serrate; flowers racemose, terminal; bracts lance-linear, caducous. *Nat. Ord.* 74. *Lindl.* POMACEÆ.

1. A. BOTRYAPIUM, *Lindl.* Leaves obovate-oblong, or elliptic-obovate, acuminate, subcordate at base, silky-villose when young, finally smooth; racemes loose, elongated; petals lincar-lanceolate. *Beck, Bot. p.* 112.

Mespilus nivea. *Marsh. Arbust. p.* 90.

M. canadensis, *var.* cordata. *Mx. Am.* 1. *p.* 291.

M. arborea. *Mx. f. Sylva.* 2. *p.* 70. ICON, *tab.* 66.

Pyrus Botryapium. *Willd. Sp.* 2. *p.* 1013. *Ait. Kew.* 3. *p.* 207. *Muhl. Catal. p.* 49. *Pursh, Am.* 1. *p.* 339. *Bigel. Bost. p.* 196.

Aronia Botryapium. *Pers. Syn.* 2. *p.* 39. *Nutt. Gen.* 1. *p.* 306. *Ell. Sk.* 1. *p.* 557. *Torr. Fl.* 1. *p.* 479. *Ejusd. Comp. p.* 203. *Florul. Cestr. p.* 63. *Eat. Man. p.* 29.
A. arborea. *Bart. Phil.* 1. *p.* 228.

Vulgò—Wild Service-berry. June berry. Snowy Medlar. Shad-flower.

Stem 8 to 15 or 20 feet high, with rather slender distant branches, forming an open top. *Leaves* 2 to 3 or 3 and a half inches long, and 1 to 2 or 2 and a half inches wide, inclining more or less to obovate, tapering rather abruptly at apex to a short sharp acumination, acutely serrate, generally a little cordate at base when full grown; *petioles* half an inch to near an inch long; *stipules* about half an inch long, lance-linear, silky-villose, mostly tinged with purple, caducous. *Flowers* large, in loose racemes about 2 inches long, terminating the branches, often a little nodding, or pendulous, rather preceding the leaves; *pedicels* half an inch to 3 quarters in length, more or less villose, bracteate at base, and frequently with 1 or 2 purple *bracts* near the flower. *Calyx* mostly smooth (sometimes villose); segments lance-ovate, acuminate, villose on the margins and inner surface. *Petals* white, about 2 thirds of an inch long, and 2 lines wide, rather obtuse, narrowed at base. *Stamens* a little longer than the calyx. *Styles* often united nearly to the stigmas. *Fruit* a small roundish-ovoid pome, 2 to 3 or 4 lines in diameter, smoothish, dark purple when mature, esculent, and not unpleasant to the taste. The 5 *cells* of the fruit often imperfectly divided by rudiments of partitions, 2-seeded; one of the *seeds* mostly abortive, and sometimes both.

Hab. Rich, moist woodlands: frequent. *Fl.* April. *Fr.* June—July.

Obs. This is quite a showy little tree, when in flower;—which, happening at the fishing season, has acquired for it the name of "*Shad flower*," or "*Shad bush.*" I have found the *fruit* to be considerably improved in size and quality, by long culture.

2. A. OVALIS? *Lindl.* Leaves roundish-elliptic, or oblong-oval, mucronate, tomentose beneath when young, finally smoothish; racemes erect, rather coarctate; petals obovate-oblong. *Beck, Bot. p.* 112.
Mespilus nivea, var. *Marsh. Arbust. p.* 90.
M. canadensis, *var.* obovalis. *Mx. Am.* 1. *p.* 291.
Pyrus ovalis. *Willd. Sp.* 2. *p.* 1014. *Muhl. Catal. p.* 49. *Pursh, Am.* 1. *p.* 340. *Bigel. Bost. p.* 195.
Aronia ovalis. *Pers. Syn.* 2. *p.* 40. *Nutt. Gen.* 1. *p.* 306. *Ell. Sk.* 1. *p.* 558. *Torr. Fl.* 1. *p.* 479. *Ejusd. Comp. p.* 203. *Florul. Cestr. p.* 63. *Eat. Man. p.* 29.

OVAL AMELANCHIER. *Vulgò*—Medlar-bush.

Stem 2 to 4 or 5 feet high, slender, branching. *Leaves* 1 to 2 inches long, and 3 fourths of an inch to an inch wide, sometimes acute, but often rounded at both ends, mucronate or cuspidate at apex, mostly serrate, the serratures sometimes nearly obsolete, rather densely tomentose beneath when young, and often slightly ferruginous, smoothish when old. *Racemes* and *pedicels* mostly erect, villose. *Calyx* mostly tomentose. *Petals* white, 1 third to half an inch long, more or less obovate, obtuse. *Fruit* about the size of the preceding, dark purple, or nearly black (dark blue, *Bigel.*) when mature.

Hab. Fence-rows, and woodlands; West Chester: rare. *Fl.* April, May. *Fr.* July.

Obs. The plant which I have taken for this species, here, often approaches the preceding,—and does not seem so well marked, as specimens which I have from *Pokono Mountain;* so that I am rather puzzled to determine whether our plant is really more than a *variety.* There are no other species known in the U. States.

233. PYRUS. *L.* *Nutt. Gen.* 441.
[The Latin name for the Pear.]

Calyx with the tube adnate to the ovary, urceolate; limb 5-cleft. *Petals* 5, sub-orbicular, concave, slightly unguiculate. *Styles* mostly 5. *Pome* closed, 5-celled; cells cartilaginous, 2-seeded. *Seeds* with a cartilaginous coat.

Shrubs, or trees: mostly unarmed; leaves simple, or pinnate, alternate, stipular; flowers in terminal cymose corymbs; bracts subulate, deciduous. *Nat. Ord.* 74. *Lindl.* POMACEÆ.

† *Fruit globose, small. Leaves glandular on the midrib above.*

1. P. ARBUTIFOLIA, *L.* Leaves obovate-oblong, or lanceolate, acute, crenately serrulate, mostly tomentose beneath, smooth above, with 1 or 2 rows of glands on the midrib; peduncles corymbose. *Beck, Bot. p.* 114.

Mespilus prunifolia, var. *Marsh. Arbust. p.* 91.
M. arbutifolia, *var.* erythrocarpa. *Mx. Am.* 1. *p.* 292.
Aronia pyrifolia. *Pers. Syn.* 2. *p.* 39.

A. arbutifolia. *Nutt. Gen.* 1. *p.* 306. *Bart. Phil.* 1. *p.* 227. *Ell. Sk.* 1. *p.* 556. *Torr. Fl.* 1. *p.* 478. *Ejusd. Comp. p.* 202. *Florul. Cestr. p.* 63. *Eat. Man. p.* 29.

ARBUTUS-LEAVED PYRUS. *Vulgò*—Choke-berry.

Stem 2 to 3 or 4 feet high, slender, branching. *Leaves* 1 to 2 inches long, and half an inch to near an inch wide, generally inclining to cuneate-obovate, but varying to elliptic, and lance-oblong, often with a short abrupt acumination, finely serrate, serratures mucronate with a small incurved purple callous point, the under surface usually very tomentose (sometimes nearly smooth), pale, the upper surface smooth, deep green, with numerous dark purple glands on the midrib; *petioles* 1 line to 1 third of an inch long, pubescent. *Flowers* in terminal pedunculate cymose or compound corymbs; *pedicels* villose, with smoothish deciduous *bracts* at base. *Calyx* villose; segments erect, acute, minutely glandular on the margin. *Petals* whitish, with a tinge of purple, roundish-ovate, often emarginate. *Anthers* purple. *Styles* smooth, subconnate and villose at base. *Fruit* a small globose pome (2 to 3 lines in diameter), smoothish, pubescent at base and apex, dark red, or purple, when mature, sweetish and astringent.

Hab. Moist woodlands: frequent. *Fl.* May. *Fr.* August—September.

Obs. The P. *melanocarpa, Willd.* (*Aronia arbutifolia, Pers.*) with the *calyx and leaves beneath smooth, and fruit nearly black*, has been very properly, I think, reduced to a *variety* of this. I have specimens from E. Marlborough, which appear to belong to that variety,—but it is much more rare than the red-fruited one.

†† *Fruit depressed-globose, umbilicate at base.*

2. P. CORONARIA, *L.* Leaves broad-ovate, rounded at base, serrate, somewhat angulate-lobed, smoothish; peduncles corymbose. *Beck, Bot. p.* 113.

Pyrus-Malus coronaria. *Marsh. Arbust. p.* 118.
Malus coronaria. *Mx. Am.* 1. *p.* 292. *Mx. f. Sylva.* 2. *p.* 67 (Icon, *tab.* 65.). *Florul. Cestr. p.* 63.

CROWN PYRUS. *Vulgò*—Crab Apple. Sweet-scented Crab-tree.

Stem 10 to 15 feet high, branching; branches spreading, stiff, and rugged with short spurs, forming a rather bushy head. *Leaves* 2 to 3 inches long, and an inch and half to 2 inches wide, often slightly cordate at base, acute, irregularly serrate, and sub-lobed, pubescent when young, finally nearly smooth; *petioles* half an inch to an inch and half long, pubescent. *Flowers* in rather loose few-flowered corymbs terminating the spurs, large and fragrant; *peduncles* about an inch long, smooth. *Calyx* smooth externally; segments spreading, lanceolate, acute, densely villose on the inner side. *Petals* pale rose-red. *Styles* smooth above, subconnate and densely villose at base. *Fruit* a depressed-globose pome, rather small (an inch or inch and half in diameter), fleshy but firm and hard, smooth, pale greenish yellow and very fragrant when mature, yet extremely acid.

Hab. Borders of woods; roadsides, &c. not very common. *Fl.* May. *Fr.* Sept.

Obs. This native apple, of late years, is becoming rather scarce. When it was more abundant, the ripe fruit was often collected for making *preserves*.

3. P. Malus, L. *Leaves ovate, or ovate-oblong, serrate, the upper surface pubescent; peduncles subumbellate.* DC. Prodr. 2. p. 635.

Malus communis. Florul. Cestr. p. 126.

Apple Pyrus. Vulgò—*Common Apple. Apple-tree.*

Gallicè—*Pommier.* Germanicè—*Der Apfelbaum.* Hisp.—*Manzano.*

Stem 15 *to* 25 *feet high, branching; branches mostly spreading, and crooked, or geniculate, forming a broad bushy head.* Leaves 2 *to* 3 *inches long, and* 1 *to* 2 *inches wide, acute or acuminate, distinctly serrate, or crenate-serrate, occasionally sub-lobed, tomentose beneath, and somewhat pubescent above, especially along the midrib and nerves;* petioles *an inch or more in length.* Flowers *in simple sessile umbels, terminal and lateral;* peduncles *half an inch to an inch long, villose.* Calyx *tomentose.* Petals *pale red.* Styles *smooth above, sub-connate and hirsutely villose at base.* Fruit *a fleshy depressed-globose or oblong pome,* 1 *to* 3 *or* 4 *inches in diameter, umbilicate at both ends, smooth.*

Hab. *Orchards, gardens, &c. common.* Fl. *May.* Fr. *July—November.*

Obs. *Almost numberless* varieties *of this valuable fruit are cultivated;—though too many of inferior quality are permitted to occupy the place of better,—for want of due attention in the selection.*

††† *Fruit turbinate, not umbilicate at base.*

4. P. communis, L. *Leaves lance-ovate, slightly serrate, the upper surface smooth; peduncles corymbose.* DC. Prodr. 2. p. 633.

Common Pyrus. Vulgò—*Pear. Pear-tree.*

Gallicè—*Poirier.* Germanicè—*Der Birnbaum.* Hisp.—*El Peral.*

Stem 15 *to* 25 *or* 30 *feet high, branching; branches virgate, rather erect, forming an oblong, or tapering head.* Leaves 2 *to* 3 *inches long, and* 1 *to* 2 *inches wide, acute, or acuminate, often nearly entire, smooth above, pubescent or tomentose beneath, and on the margin, when young;* petioles 1 *to* 2 *inches in length.* Flowers *in clustered corymbs, on lateral spurs;* peduncles *half an inch to an inch long, pubescent.* Calyx *pubescent.* Petals *white.* Anthers *pale red.* Styles *distinct, villose at base.* Fruit *a fleshy succulent obovoid pome, umbilicate at apex, tapering and produced at base, often a little curved, or oblique, smooth, or sometimes with a roughish skin.*

Hab. *Gardens, &c. frequent.* Fl. *May.* Fr. *Aug.—November.*

Obs. *Numerous* varieties *of this favorite fruit are cultivated. The branches (and frequently the whole tree) are subject to a sudden blight,—the cause of which is not well understood. Two or three additional species, as the genus is at present constituted, are enumerated as natives of the U. States.*

234. CYDONIA. *Tournef. DC. Prodr.* 2. *p.* 638.

[So named from *Cydonia*, a city of Crete; whence it was obtained.]

Calyx with the tube adnate to the ovary; limb 5-cleft. *Petals* 5. *Styles* 5. *Pome* closed, 5-celled; cells cartilaginous, many-seeded. *Seeds* covered with a mucilaginous pulp.

Small trees, or shrubs: mostly unarmed; leaves simple, alternate, very entire, or serrate; flowers mostly solitary. *Nat. Ord.* 74. *Lindl.* POMACEÆ.

1. C. VULGARIS, Pers. *Leaves oblong-ovate, obtuse at base, very entire, tomentose beneath; peduncles solitary, and, with the calyx, lanuginous; fruit sub-turbinate, tomentose.* DC. l. c.
Pyrus Cydonia. Willd. Sp. 2. p. 1020. Ait. Kew. 3. p. 209. Muhl. Catal. p. 49. Florul. Cestr. p. 126. Eat. Man. p. 291.

COMMON CYDONIA. Vulgò—*Quince. Quince-tree.*

Gall.—*Cognassier.* Germ.—*Der Quittenbaum.* Hisp.—*Membrilléro.*

Stem 8 *to* 10 *or* 12 *feet high, branching, and somewhat spreading.* Leaves 2 *to* 3 *inches long, and* 1 *to* 2 *inches wide, rather acute, smooth and green above, hoary-tomentose beneath;* petioles *about half an inch long, tomentose.* Flowers *terminal, solitary, large;* peduncles 1 *fourth to* 1 *third of an inch long.* Calyx *densely lanuginous;* segments *ovate-oblong, sub-foliaceous, glandular-serrulate.* Petals *reddish white, or pale blush color, obovate.* Stamens *in a single series, erect.* Styles *smooth above, subconnate and densely lanuginous at base.* Fruit *a large fleshy and somewhat obovoid pome, umbilicate at apex, produced at base, clothed with a soft tomentum, yellow when mature.*

Hab. *Gardens; ditch banks, &c. frequent.* Fl. *May.* Fr. *Sept.—October.*

Obs. *The* fruit *of this is supposed to be the golden apple of the Hesperides, so celebrated in ancient fable. It is chiefly used, here, for making* preserves,—*and, occasionally,* domestic wine. *The* C. japonica, Pers. (Pyrus japonica, Willd.) *so much admired for its beautiful flowers, is sometimes to be met with in our gardens. There are no native species in the U. States.*

b. OVARY SUPERIOR: *Fruit dry,—Carpels, or Akenes.*

235. SPIRÆA. *L. Nutt. Gen.* 442.

[Supposed to be from the Greek, *Speira*, a cord; in allusion to its flexible branches.]

Calyx 5-cleft, spreading, persistent. *Petals* 5, orbicular, equal. *Stamens* exserted. *Carpels* 1, 3, or many, distinct, or rarely connate at base, mostly sessile, with a short acumination at apex. *Seeds* 2, or many, affixed to the inner suture.

Shrubby, or herbaceous: leaves alternate, simple, or pinnately dissected, often stipular; flowers corymbose, or racemose-paniculate. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

1. S. OPULIFOLIA, *L.* Shrubby; leaves mostly roundish-ovate and 3-lobed, doubly crenate-serrate, smoothish, stipular; corymbs terminal,

pedunculate, hemispherical, with the flowers crowded; carpels mostly 3, connate at base, inflated, 3 times as long as the calyx. *Beck, Bot. p.* 98.

OPULUS-LEAVED SPIRÆA. *Vulgò*—Nine-bark.

Stem 3 to 5 feet high, with alternate branches, and the bark in many loose laminæ, or layers. *Leaves* 1 to 2 inches long, and nearly as wide as long, generally obtuse, or rounded, and 3-lobed, sometimes oblong-ovate and rather acute, unequally and crenately incised, slightly pubescent on the nerves, and in their axils, beneath; *petioles* half an inch to 3 quarters in length, smoothish; *stipules* lanceolate. *Corymbs* simple, subumbellate; *common peduncle* half an inch to an inch long; *pedicels* half an inch to near an inch long, slender, numerous, crowded, pubescent, each with a lance-linear caducous *bract* at or near the base. *Calyx* campanulate, clothed with a short tomentose pubescence: *segments* lance-ovate, acute (obtuse, *Torr.*). *Petals* white, or often tinged with purple. *Styles* 3 to 5. *Carpels* 3, 4, or 5, about 1 third of an inch long, compressed, connate below, diverging above, and acuminate with the persistent base of the styles, smooth and shining, greenish yellow, or often purple, usually 2-seeded. *Seeds* obovoid, smooth and shining, yellowish.

Hab. Banks of streams; Brandywine; Valley creek: rare. *Fl.* June. *Fr.* Sept.

Obs. This is the *variety, tomentella, DC.* the young corymbs being quite hoary with a short tomentose pubescence; but in their more advanced stages they become much smoother.

2. S. SALICIFOLIA, *L.* Suffruticose; leaves lanceolate, or obovate-lanceolate, acute, or obtuse, sharply serrate, glabrous, without stipules; racemes terminal, compound, densely paniculate; carpels 5, distinct, not inflated, scarcely twice as long as the calyx. *Beck, Bot. p.* 99.

S. tomentosa alba. *Marsh. Arbust. p.* 147.

S. alba. *Muhl. Catal. p.* 49. *Bigel. Bost. p.* 196.

WILLOW-LEAVED SPIRÆA. *Vulgò*—Ind. Pipe-shank. Meadow Sweet.

Stem 3 to 6 feet high, somewhat branched; branches erect, tender or suffruticose, smooth, mostly dark purple, filled with pith. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to an inch wide, varying from oblong-lanceolate to obovate-oblong and cuneate, mostly acute, sharply and somewhat doubly serrate, with the serratures cartilaginous at the point, generally smooth on both sides, and a little glaucous beneath; *petioles* very short, naked. *Flowers* in a crowded racemose terminal panicle 2 to 4 inches in length; principal branches of the panicle with lanceolate bracts at base, the pedicels often with subulate bracts near the flower; *bracts* villose-ciliate. *Calyx* sub-turbinate, smooth, mostly purplish; *segments* ovate, acute (or if cut off at base, would form an equilateral triangle). *Petals* reddish white, or blush color. *Carpels* 5, small, obovoid-oblong, somewhat compressed, acute at base, smooth, obliquely beaked by the base of the style, opening on the inner side. *Seeds* small, oblong.

Hab. Swampy thickets, and low grounds: frequent. *Fl.* June—July. *Fr.*—Oct.

Obs. Authors describe several *varieties* of this. Ours seems to be the var. *latifolia, Willd.* and *Ait.* or the var. *alba, Lindl. Ency.*—though I have rarely, if ever, observed the flowers to be perfectly *white*. Nine or ten additional species are enumerated in the U. States.

236. GILLENIA. *Mœnch. Nutt. Gen.* 443.

[Greek, *gelao*, to laugh; in allusion to its exhilarating qualities. *ex Eat. sed qu?*]

Calyx tubular-campanulate, slightly contracted at the orifice, 5-toothed, persistent. *Petals* 5, linear-lanceolate, narrowed at base, rather unequal. *Stamens* included. *Carpels* 5, each pointed by the persistent style, 2-seeded.

Herbaceous: leaves alternate, trifoliate, stipular; flowers terminal, paniculately scattered, on long pedicels. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

1. G. TRIFOLIATA, *Mœnch.* Leaflets lanceolate, or obovate-lanceolate, acuminate, serrate; stipules small, subulate-linear, mostly entire. *Beck, Bot. p.* 100.

Spiræa trifoliata. *Willd. Sp.* 2. *p.* 1063. *Mx. Am.* 1. *p.* 294. *Pers. Syn.* 2. *p.* 47. *Ait. Kew.* 3. *p.* 257. *Muhl. Catal. p.* 49. *Pursh, Am.* 1. *p.* 343.

THREE-LEAVED GILLENIA. *Vulgò*—Indian Physic. Bowman's root.

Root perennial. *Stem* 2 to 3 or 4 feet high, slender, paniculately branched at summit, somewhat angled, or ribbed, and striate, smooth, or slightly pubescent, mostly purplish. *Leaves* all ternate, upper ones subsessile, lower ones petiolate; *stipules* subulate, or lance-linear, sometimes serrate, the lower ones adnate to the petioles; *leaflets* 2 to 4 inches long, and half an inch to an inch or inch and half wide, oblong-lanceolate, often lance-obovate and somewhat cuneate, sharply and unequally serrate, smoothish above, pubescent beneath, subsessile, or narrowed to a short petiole. *Flowers* terminal, loosely and often corymbosely paniculate, on slender pedicels half an inch to an inch or more in length—and frequently on naked axillary peduncle-like branches 2 to 4 inches long, with a subulate *bract* above the middle,—or at the base of the pedicels, when subdivided. *Calyx* 10 ribbed, smooth; *segments* 5, short, erect, ciliate-serrulate, sharply acuminate. *Petals* white, or sometimes slightly tinged with red, about 3 fourths of an inch long, and 2 lines wide, narrowed at each end, but rather obtuse at apex. *Stamens* about 15, scarcely as long as the calyx. *Carpels* at first subconnate, or closely crowded into an ovoid form, hirsute, with 5 erect contiguous *styles* about half as long as the calyx,—finally distinct, spreading, and bursting the tube of the calyx,—opening at the sutures into 2 valves. *Seeds* oblong, a little oblique, convex externally, slightly concave on the inner side, somewhat rugose-pitted, brown.

Hab. Woodlands, and thickets: frequent. *Fl.* June. *Fr.* August.

Obs. This plant has had considerable reputation for its medical properties,—the *root* being said to operate as an emetic, cathartic, or tonic, according to the dose, or mode of exhibition. It is rarely resorted to, at present. One other species occurs in the western States of this Union.

237. AGRIMONIA. *L. Nutt. Gen.* 436.

[Supposed to be corruptly derived from *Argemone;* which see.]

Calyx turbinate, calyculate at base, armed with hooked bristles above; limb 5-cleft. *Petals* 5. *Stamens* about 12. *Styles* 2. *Akenes* 2, in the tube of the indurated calyx.

Herbaceous: leaves alternate, pinnately dissected, stipular; flowers in terminal racemose spikes, with trifid bracts. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

1. A. EUPATORIA, *L.* Leaves interruptedly pseudo-pinnate; leaflets ovate-oblong or elliptic-lanceolate, coarsely serrate; spike virgate; tube of the calyx campanulate; fruit distant. *Beck, Bot. p.* 108.

Vulgò—Agrimony. *Gallicè*—Aigremoine. *Germanicè*—Odermennig.

Root perennial. *Stem* 2 to 3 feet high, simple, hairy, sometimes very hirsute. *Leaves* 4 or 5 to 9 inches long, interruptedly pseudo-pinnate, with a terminal leaflet; *principal leaflets* 2 to 3 or 4 inches long, and 3 fourths of an inch to near 2 inches wide, mostly 5 or 7 in number, smoothish above, pilose on the nerves beneath, sessile, except the terminal one; *common petiole* hairy, with large coarsely serrate or lobed *stipules* at base; *intermediate leaflets* much smaller, more or less ovate, sessile, often 3-cleft, opposite or alternate, sometimes 2 or 3 pairs between the principal leaflets. *Spike* 3 to 6 or 8 inches long, slender, often branched. *Flowers* alternate, on short pedicels with each a trifid *bract* at base. *Calyx* with a small 2-leaved involucre, or calycle, at base; *tube* ribbed, or striate, smoothish, the summit invested with hooked bristles at the base of the segments; *segments* lance-oblong. *Petals* yellow, oval, about twice as long as the calyx. *Styles* shorter than the stamens. *Akenes*, or dry indehiscent capsules, 2, in the bottom of the indurated persistent calyx.

Hab. Borders of woods; fence-rows, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. There is a *variety* of this (*var. hirsuta, Torr.*) which is very hairy,—with the *leaflets* narrower, and more numerous. It is not uncommon, here. Two or three additional species have been enumerated in the U. States; but they require to be better authenticated.

Order 3. Polygynia.

OVARIES SUPERIOR. a. *Fruit dry.*

238. GEUM. *L. Nutt. Gen.* 448.

[Greek, *geuo*, to taste well; alluding to the flavor of one of the species.]

Calyx concave; limb 5-cleft, with 5 small external *bracts* opposite the clefts. *Petals* 5. *Carpels* in a head, awned by the persistent styles; *styles*, after flowering, geniculate or recurved at summit; *stigmas* filiform, recurved at base and articulated with the styles, caducous, leaving the summit of the styles uncinate.

Herbaceous: leaves alternate, mostly pinnately dissected, stipular, with the stipules adnate to the petiole; peduncles terminal, or axillary. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

* *Calyx reflexed.*

1. G. VIRGINIANUM, *L.* Radical leaves trifoliate, or pseudo-pinnate, lower stem-leaves trifoliate, the upper ones simple, lanceolate; stipules subovate, entire, or incised; peduncles diverging; flowers erect; petals cuneate-obovate; styles glabrous; stigmas subclavate, pilose at base. *Beck, Bot. p.* 101.

Also? G. geniculatum. *Mx. Am.* 1. *p.* 300. *Pers. Syn.* 2. *p.* 57. *Muhl. Catal. p.* 51. *Pursh, Am.* 1. 351. *Nutt. Gen.* 1. *p.* 309. *Beck, l. c. Eat. Man. p.* 157.

Also? G. Album. *Muhl. l. c. Pursh, l. c. Nutt. l. c. Bart. Phil.* 1. 235. *Ell. Sk.* 1. *p.* 572. *Bigel. Bost. p.* 207. *Torr. Fl.* 1. *p.* 493. *Ejusd. Comp. p.* 209. *DC. Prodr.* 2. *p.* 550. *Florul. Cestr. p.* 65. *Lindl. Ency. p.* 454. *Beck, l. c. Eat. l. c.*

VIRGINIAN GEUM. *Vulgò*—White Avens. Herb bennet, or *herbe benite.*

Root perennial. *Stem* 2 to 3 feet high, erect, paniculately branched at summit, more or less hairy, often hirsute. *Radical leaves* trifoliate, or often pseudo-pinnate with about 5 leaflets or segments; *leaflets* an inch and half to 3 inches long, and 1 to 2 inches wide, broad-ovate, or elliptic, the lateral ones obliquely rhomboid-ovate, the terminal ones larger, all crenate-serrate, and incised, or somewhat lobed, more or less cuneate at base, sessile, or subsessile, hairy; *common petioles* 4 to 6 or 8 inches long, those of the pinnate leaves often with a pair of small leaflets an inch or two below the others. *Lower stem-leaves* mostly trifoliate, sometimes quinately pseudo-pinnate, petiolate, becoming 3-lobed and nearly sessile as they ascend; *upper leaves* simple, lanceolate, incised-serrate. *Stipules* sometimes entire, generally lobed, or incised-dentate. *Flowers* on peduncles 1 to 2 or 3 inches long, terminating the branches, at first somewhat nodding, finally erect or diverging. *Calyx* hairy; *segments* reflexed, lanceolate, with a tapering apex, and a short white pubescence on the margin; *bracts* at the clefts of the segments minute, linear. *Petals* white, or sometimes pale yellow, cuneate-obovate, about as long as the calyx. *Carpels* crowded into a head, bristly; *styles* smooth, persistent, finally divaricate, or reflexed; *stigmas* linear, or subclavate, hairy at base, articulated to the styles,—when the flower expands, the stigmas and styles become curved or contorted at the articulation, and the stigmas soon fall off, leaving the points of the styles hooked.

Hab. Borders of woods, thickets, &c. frequent. *Fl.* June—July. *Fr.* September.

Obs. The specimens with pseudo-pinnate leaves are usually much more hirsute than the others; but the variations between G. *album* and G. *virginianum* are so numerous and inconstant, that I believe they may very properly be reduced to one species,—as suggested by *De Candolle*, and sanctioned by *Hooker*.

* * *Calyx erect.*

2. G. RIVALE, *L.* Radical leaves interruptedly pseudo-pinnate, the terminal segment large, cordate-orbicular; stem-leaves trifoliate, or 3-cleft, segments acute; stipules ovate, incised; peduncles erect; flowers nodding; petals broad, obcordate-spatulate, unguiculate; styles pilose at base; stigmas long, filiform, plumose. *Beck, Bot. p.* 101.

RIVER GEUM. *Vulgò*—Water Avens. Purple Avens.

Root perennial. *Stem* about 2 feet high, erect, nearly simple, rather retrorsely pilose. *Radical leaves* interruptedly pseudo-pinnate, on hairy petioles 6 to 9 inches long; *principal leaflets* 3 to 5 (often only the terminal one), the lateral ones obovate, incised-serrate, or lobed, subsessile, the terminal one 2 to near 3 inches long, and wider than long, roundish-cordate, incised-serrate and sublobed, often distinctly 3-lobed, pilose; the *intermediate leaflets* small, ovate, entire, serrate, or 3-cleft, sessile, opposite, or alternate. *Flowers* large, terminal on the few erect branches at summit, mostly nodding; peduncles tomentose. *Calyx* pubescent, dark purple externally; *segments* erect, lanceolate, rather acuminate; *bracts* at the clefts small, linear. *Petals* purplish orange, broadly spatulate, very obtuse, or slightly obcordate, abruptly narrowed to a claw below, rather longer than the calyx. *Carpels* in a thick obtuse head, hirsute: *styles* slender, dark purple, pilose at base; *stigmas* filiform, much longer than in the preceding species, plumosely hairy, except near the apex.

Hab. Swampy meadow, at Downingtown: very rare. *Fl.* May—June. *Fr.* August.

Obs. First detected in the above locality, by Mr. JOSHUA HOOPES, in 1832. It has not yet been found elsewhere within the County. Six or eight additional species have been enumerated in the U. States; but some of them are not well established.

239. POTENTILLA. *L. Nutt. Gen.* 449.

[Latin, *potens*, powerful; in reference to its supposed medical virtues.]

Calyx concave; limb mostly 5-cleft, with an external *bract* at each cleft (appearing 10 cleft). *Petals* mostly 5. *Carpels* numerous, roundish, rugose, naked, capitate on a small dry persistent receptacle.

Herbaceous, or rarely fruticose: leaves compound (ternate, digitate, or pinnate); stipules adnate to the petiole; flowers solitary, or subcorymbose, axillary and terminal. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

* *Leaves ternate.*

1. P. NORVEGICA, *L.* Hirsute; stem erect, dichotomous above; leaves ternate; leaflets lance-oval and obovate-oblong, simply and doubly incised-serrate; stipules lanceolate; peduncles axillary, subcorymbose at summit; petals obovate, emarginate, shorter than the calyx. *Beck, Bot. p.* 106.

NORWEGIAN POTENTILLA.

Whole plant hirsute. *Root* annual. *Stem* 1 to 2 feet high, simple below, dichotomously branched above. *Leaves* all trifoliate, on petioles 1 to 4 inches long; *leaflets* 1 to 3 inches long, and 3 fourths of an inch to an inch and half wide, lateral ones sessile, or subsessile, terminal one on a short petiole, all coarsely and often doubly incised-serrate. *Stipules* large (often an inch or more in length), lanceolate, acute, entire, or partially lobed. *Flowers* often numerous, in leafy corymbs at summit, and on long solitary peduncles below; *peduncles* half an inch to an inch and half long, the lower ones often opposite the leaves. *Calyx-segments* ovate-lanceolate, rather acuminate; *bracts* lanceolate, rather longer than the calyx-segments, giving the appearance of 10 nearly equal segments. *Petals* yellow, oval, or obovate, slightly emarginate. *Carpels* somewhat compressed, obliquely ovate, with the style rather on one side of the apex, rugosely ribbed, ribs diverging below. *Receptacle* ovoid, acute, hairy.

Hab. Pastures, and roadsides: frequent. *Fl.* July—Aug. *Fr.* September.

Obs. This may be a native here; but to me it has the appearance of an introduced plant.

* * *Leaves digitate.*

2. P. CANADENSIS, *L.* Villose; stem procumbent, and ascending, somewhat branched, or sarmentose from near the base; leaves quinate; leaflets sessile, cuneate-obovate, acutely incised-dentate, clothed with an appressed whitish silky villus beneath. *Beck, Bot. p.* 106.

P. sarmentosa. *Bigel. Bost. p.* 204. Also, *Eat. Man. p.* 280. Not? of *Muhl.*

CANADIAN POTENTILLA. *Vulgò*—Cinque-foil. Barren Strawberry.

Root perennial, thick, often branching, with numerous strong fibres. *Stem* 2 to 10 or 12 inches long, often several from the same root, slender, at first rather erect, or assurgent, at length procumbent, villose. *Radical leaves* on spreading petioles 1 or 2 to 5 inches long; *leaflets* half an inch to an inch and half long, and 1 third of an inch to near an inch wide, obovate, mostly obtuse, sharply incised-dentate above the middle, cuneate and entire below the middle; *stem leaves* few,—those above sometimes sessile, ternate, and simple; *stipules* ovate, entire, or incised. *Flowers* on slender axillary peduncles 1 to 2 inches in length. *Calyx-segments*

and *bracts* nearly equal, resembling a 10-cleft calyx. *Petals* bright yellow, roundish-obovate, often slightly emarginate, longer than the calyx.

Hab. Sterile old fields, and pastures: frequent. *Fl.* April—May. *Fr.* June—July.

Obs. The first flowers often appear on this, when the stems are very short; but others subsequently appear on the extended branches, or runners,—as remarked by Dr. *Bigelow*. It is a plant which affects sterile neglected pastures; and its abundance is a pretty sure indication of a poor thriftless farmer.

3. P. SIMPLEX, *Mx.* Pilose; stem somewhat erect, nearly simple, sarmentose and nodding at summit; leaves quinate; leaflets subsessile, elliptic-oblong, rather acute, cuneate at base, sharply and coarsely serrate, pilose beneath. *Beck, Bot. p.* 106.

P. caroliniana. *Pers. Syn.* 2. *p.* 55. Also, *Muhl. Catal. p.* 51.

Also? P. sarmentosa. *Muhl. l. c. Lindl. Ency. p.* 454. Not of *Bigel.* nor *Eat.*

SIMPLE POTENTILLA. *Vulgò*—Five-finger.

Root perennial, thick, with strong fibres. *Stem* 9 to 15 inches high, often 2 or 3 from the same root, nearly erect, leafless below, pilose and roughish, often purplish, finally elongated by an oblique sarmentose branch, or runner, at the summit, which often extends to 2 feet or more in length, and becomes procumbent. *Radical leaves* on nearly erect petioles 3 to 6 or 8 inches long; *leaflets* 1 to 2 inches long, and half an inch to an inch wide, oblong, tapering at each end; *stem leaves* usually larger,—an opposite pair at summit, one petiolate the other sessile, and a single petiolate one some distance below,—all quinate, and more or less pilose; those on the runner more villose, and often ternate near the extremity; *stipules* large, oblong-lanceolate, incised, or often nearly entire. *Peduncles* axillary, solitary, filiform, about as long as the leaves. *Calyx-segments* lanceolate, shorter than the lance-oblong *bracts* at the clefts. *Petals* yellow, obovate, emarginate, sometimes nearly obcordate, often longer but not unfrequently shorter than the calyx,—or, at least, than the *bracts*. *Carpels* subreniform, rough and somewhat verrucose.

Hab. Borders of woods; woodland clearings, &c. frequent. *Fl.* May, June. *Fr.* July.

Obs. This is undoubtedly nearly related to some states of the preceding, and has been suspected to be only a *variety;* but there is usually no difficulty in distinguishing them, at a glance, when viewed in their native localities. Twelve or fifteen additional species occur in the U. States; and Prof. *Hooker* enumerates 34 species in British America.

B. *Fruit succulent, or fleshy.*

240. FRAGARIA. *L. Nutt. Gen.* 451.

[Latin, *fragrans*, odorous; in reference to its fragrant fruit.]

Calyx concave; limb 5-cleft, with an external *bract* at each cleft (appearing 10-cleft). *Petals* 5. *Carpels* numerous, naked, dry, smooth, scattered and imbedded on a large pulpy deciduous *receptacle*. *Styles* lateral.

Herbaceous: producing runners, or creeping stems; leaves trifoliate; stipules adnate to the petiole; flowers mostly in terminal cymose corymbs. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

1. F. VIRGINIANA, *L.* Leaflets broad-oval, or cuneate-obovate, coriaceous, not plicate, smoothish above; hairs of the pedicels appressed; calyx of the fruit spreading. *Beck, Bot. p.* 105.

Also? F. canadensis. *Mx. Am.* 1. *p.* 299. *Pursh, Am.* 1. *p.* 357. *Nutt. Gen.* 1. *p.* 311. *Ell. Sk.* 1. *p.* 575. *DC. Prodr.* 2. *p.* 571. *Hook. Am.* 1. *p* 185. *Lindl. Ency. p.* 452. *Beck, l. c. Eat. Man. p.* 148.

VIRGINIAN FRAGARIA. *Vulgò*—Wild Strawberry.

Root perennial, thick, with numerous fibres. *Stem* very short, or none, but runners are often thrown out from the crown of the root, which extend several inches. *Leaves* mostly radical, on villose *petioles* 2 to 4 or 6 inches long, with lance-oblong obliquely acuminate *stipules* at base; hairs on the petioles spreading horizontally; *leaflets* 1 to 2 inches long, and 3 fourths of an inch to an inch and half wide, coarsely serrate, silky-pilose when young, particularly on the nerves beneath, finally smoothish, on short petioles. *Flowers* corymbose, on a radical or scape-like peduncle scarcely as tall as the leaves; *pedicels* bracteate at base; *bracts* oblong, acuminate, or with 2 or 3 mucronate teeth at apex. *Peduncle* and *pedicels* clothed with erect or appressed hairs. *Calyx* hairy; *segments* lanceolate, acuminate, spreading,—the intermediate *bracts* lance-linear, nearly equal with the segments. *Petals* white, about as long as the calyx-segments. *Fruit* ovoid, nodding, consisting of the pulpy deciduous berry-like receptacle, with the minute smooth carpels imbedded on the pitted surface, bright purple when mature, mostly very fragrant, and pleasant to the taste, sometimes rather acid.

Hab. Neglected old fields; fence-rows, &c. frequent. *Fl.* April. *Fr.* May—June.

Obs. Every one has sufficient Botany, and good taste, to know this plant, and to admire its delicious fruit. It is not very easy, however, to give good distinguishing characters to all the *cultivated* sorts. Prof. *Hooker* seems to think the F. *elatior*, or *Hautboy Strawberry*, may be a variety of this. The F. *vesca* (*English*, or *Garden Strawberry*), producing both *red* and *white* fruit, is chiefly distinguished by its numerous runners, the peduncles being taller than the leaves, the leaflets somewhat plicate, and the calyx of the fruit reflexed. The F. *chilensis* (*Chili Strawberry*), which is sometimes found in our gardens, is a stouter plant, with firm coriaceous rugose leaflets, the peduncles and pedicels clothed with a spreading or reflexed villose pubescence, and the calyx embracing the large fruit. Some of the species are apt to be *dioicous*, or *polygamous*, by abortion,—especially under cultivation. It is doubtful, I think, whether we have more than one native species in the U. States,—though Prof. *Hooker* has admitted 4 in his Flora of British America.

241. RUBUS. *L. Nutt. Gen.* 445.

[Latin, *Ruber*,—or Celtic, *Rub*,—red; from the color of the fruit, or branches.]

Calyx flattish at base; limb 5-parted, without bracts at the clefts. *Petals* 5. *Carpels* numerous, capitate on a protuberant spongy receptacle, becoming succulent, cohering *drupels*, and forming a compound berry. *Styles* sub-lateral, persistent.

Suffruticose, or rarely herbaceous: root perennial; stems mostly biennial, aculeate; leaves petiolate, pinnate, digitate, or simple; flowers terminal, subcorymbose, racemosely paniculate, or solitary. *Nat. Ord.* 73. *Lindl.* ROSACEÆ.

* *Leaves pinnate, or ternate,—hoary-tomentose beneath.*

1. R. IDÆUS, L. *Stem nearly erect, strigosely hispid, or smoothish and armed with slender recurved prickles; leaves quinate-pinnate and ternate; flowers in paniculate corymbs; petals entire; carpels tomentose.* Beck? Bot. p. 102.

Ida Rubus. Vulgò—*Antwerp Raspberry. Garden Raspberry.* Gallicè—*Framboisier.* Germ.—*Himbeerstaude.* Hisp.—*Frambuéso.*

Root *creeping.* Stem 3 *to* 5 *feet high, somewhat fruticose, terete, branching, pale brown, mostly hispid when young, especially towards the base, smoothish and prickly above, sometimes pubescent—the outer hispid bark below exfoliating the second year.* Lower leaves *odd-pinnate by fives,* upper ones *ternate;* common petioles 1 *to* 3 *or* 4 *inches long, aculeate;* stipules *setaceous;* leaflets 2 *to* 3 *or* 4 *inches long, and* 1 *to* 2 *or* 3 *inches wide, broad-ovate, or sub-rhomboid, acuminate, unequally incised-serrate, the terminal one petiolate, the others sessile, all smoothish and green above, clothed with a dense white cottony tomentum beneath.* Corymbs *terminal, and axillary, loose;* pedicels *aculeate, bracteate at base.* Calyx-segments *ovate-lanceolate, acuminate, hoary-tomentose.* Petals *white, obovate-cuneate, entire, shorter than the calyx.* Carpels *incurred at apex, rugose, clothed with a short dense pubescence, becoming succulent and drupe-like, forming a compound hemispherical berry, concave beneath, and covering a conical receptacle, purple, amber-colored, or whitish, when mature.*

Hab. *Gardens: frequent.* Fl. *May.* Fr. *July.*

Obs. *There appears to be some pretty distinct* varieties *of this. It is often cultivated, here, for its finely flavored fruit; but I doubt its being a native,—although given as such by* Pursh, *and others.*

2. R. occidentalis, *L.* Stem slender, leaning or recurved, smooth, glaucous, armed with recurved prickles; leaves mostly ternate; flowers in sub-umbellate corymbs; petals often emarginate; carpels smoothish. *Beck, Bot. p.* 102.

Western Rubus. *Vulgò*—Black Raspberry. Thimble-berry.

Stem 5 to 8 or 10 feet long, sparingly branched, suffruticose, terete, slender, leaning and often arching over so that the flaccid summit comes to the ground and takes root, mostly purplish and covered with a fine glaucous or bluish white powder. *Leaves* generally ternate; *leaflets* 2 to 4 or 5 inches long, and 1 to 2 or 3 inches wide, ovate, or lance-ovate, often with a long tapering acumination, and a little cordate at base, unequally incised-serrate (the lateral ones sometimes partially lobed), green and smoothish above, clothed with a dense glaucous or bluish white tomentum beneath: *petioles* pubescent, and somewhat aculeate; *stipules* setaceous. *Corymbs* mostly terminal on the young branches, often subumbellate, leafy at base; *pedicels* mostly tomentose, aculeate; *bracts* subulate-linear. *Calyx* tomentose; *segments* lanceolate, acuminate. *Petals* white, obovate-cuneate, often emarginate, or bifid at apex, shorter than the calyx. *Fruit* dark purple, or nearly black (rarely whitish) when mature, smaller than the preceding, but of a similar form, sweet and well-flavored.

Hab. Fence-rows; borders of woods, &c. frequent. *Fl.* May. *Fr.* July.

Obs. A *variety* of this, with the *fruit nearly white,* has been observed by Wm. Jackson, and D. Townsend, Esquires, in different parts of this County.

* * *Leaves digitate,—with* 3 *or* 5 *leaflets.*

3. R. cuneifolius, *Pursh.* Stem erect, sub-terete; branches, petioles and peduncles pubescent; leaves mostly ternate; leaflets cuneate-obovate, sub-plicate and dentate-serrate above the middle, entire and slightly revolute at base, tomentose beneath; racemes loose, few-flowered, sub-corymbose. *Beck, Bot. p.* 103.

R. parvifolius. *Muhl. Catal. p.* 50. Not of *Willd. Pers. DC.* nor *Lindl.*

Wedge-leaved Rubus.

Stem 2 to 3 feet high, nearly terete, or slightly angular, finally smoothish, purplish brown, almost shrubby, armed with numerous subulate recurved prickles, branched; branches pubescent. *Leaves* ternate, rarely quinate; *petioles* half an inch to an inch and half long, suffruticose, pubescent, often very prickly; *stipules* subulate-linear; *leaflets* 1 to 2 inches long, and half an inch to about an inch wide, more or less cuneate, and obtuse, with a short abrupt acumination, unequally dentate-serrate at summit, serratures acuminate, margin entire and somewhat revolute below the middle, upper surface deep green, sprinkled with fine appressed hairs, clothed with a cinereous tomentum beneath, mostly ferruginous on the nerves, nerves prominent, giving the leaflets a plicate appearance, midrib aculeate, the terminal leaflet on a short petiole, lateral ones subsessile, sometimes partially lobed, and rarely divided so as to form a quinate leaf. *Corymbs* terminal, few-flowered; *pedicels* diverging, pubescent, aculeate, and often with 1 or 2 *bracts* near the middle, lower ones axillary, elongated. *Calyx* tomentose; *segments* lance-ovate, short-acuminate, or mucronate. *Petals* white, sometimes tinged with red, lance-oval, cuneate at base, 3 times as long as the calyx. *Fruit* ovoid, or oval, rather small (about half an inch long), black when mature, succulent and well-flavored (hard and dry, *Pursh*); *carpels* rugose-pitted when dried, keeled, gibbous, obliquely beaked by the base of the style.

Hab. Dry hills; E. Nantmeal township: rare. *Fl.* May—June. *Fr.* July.

Obs. Collected by D. Townsend, Esq. in 1835, on the farm of Mr. *Mordecai Evans*, in East Nantmeal. It is very common in New Jersey,—and has been found in Delaware County, by Mr. Joshua Hoopes; but the above is the only locality yet known in Chester County.

4. R. villosus, *Ait.* Stem erect, angular, smoothish, aculeate; young branches, leaves and racemes glandular-pubescent; leaves ternate and quinate; leaflets ovate, and lance-oval; racemes simple, elongated, loose, many-flowered; pedicels longish, bracteate at base; calyx-segments oblong-ovate, mucronately acuminate. *Beck, Bot. p.* 103.

R. fruticosus. *Marsh. Arbust. p.* 137. Not of *Linn.*

Villose Rubus. *Vulgò*—Blackberry bush. Common Brier.

Root creeping. *Stem* 3 to 6 or 8 feet high, mostly erect, stout, angular, or ridged and somewhat grooved, smooth, dark brown or purple, often greenish, almost shrubby, armed with stout curved prickles, branching; young branches and racemes clothed with a villose glandular pubescence, somewhat aculeate. *Leaves* ternate, or often quinate on stems of the first year, sometimes simple near the racemes; *petioles* villose and aculeate; *stipules* subulate, or lance-linear; *leaflets* 2 to 3 or 4 inches long, and 1 to 2 inches wide, varying from ovate to lance-oblong and obovate, mostly acute, doubly or unequally serrate, pilose above, villose beneath and aculeate on the midrib, the lateral ones on short petioles (or subsessile), the terminal petiole much longer. *Racemes* terminal, rather large, many-flowered; *pedicels* half an inch to an inch or more in length, alternate, each with an oblong-lanceolate, or often 3-cleft, *bract* at base,—sometimes the racemes are leafy, with a long pedicel from the axil of each simple lance-ovate petiolate leaf (var. *frondosus*? *Bigel.*). *Calyx* villose; *segments* oblong-ovate, with a rather short abrupt sub-linear acumination, and a whitish tomentum on the margins and inner surface. *Petals* white, obovate-oblong, or lance-oval, spreading, rather distant when expanded. *Fruit* ovoid-oblong, large (half an inch to near an inch in length), at first green, then purple, and finally black when mature, succulent, sweetish and agreeable to the taste, when fully ripe,—though acerb and bitterish previously.

Hab. Old fields; borders of woods, &c. common. *Fl.* May. *Fr.* July—August.

Obs. The *root* of this is somewhat astringent; and the infusion is often employed with good effect, as a remedy for diarrhœa, and mild dysentery. The ripe *berries*, also, afford a pleasant *jam*, which is considered salutary in such cases; and are moreover frequently put in requisition by the pastry cook, for making pies. Even the *knots* which are formed on the branches, from the puncture of insects, are sometimes collected, and worn or carried by credulous simpletons, as a sort of *amulet*, or charm against the tooth ache! The plant, nevertheless, is often something of a nuisance on our farms, from the rapidity with which it inclines to spread, and take possession of neglected fields.

5. R. TRIVIALIS, *Mx.* Stem procumbent, sarmentose, armed with numerous recurved prickles; branches assurgent, short, sparingly aculeate; leaves mostly ternate; leaflets ovate, or oval, acute, unequally serrate, more or less pilose; pedicels subsolitary, axillary, or in terminal few-flowered corymbs; calyx-segments ovate-oblong, mucronate, margined with a white tomentum. *Torr. Fl.* 1. *p.* 489.

R. hispidus. *Marsh. Arbust. p.* 137. *DC. Prodr.* 2. *p.* 564. *Beck, Bot. p.* 103. Not? of *Linn. Willd. Pers. Ait. Muhl.* &c.

R. procumbens, *Muhl. Catal. p.* 50. *Bart. Phil.* 1. *p.* 233.

TRIVIAL RUBUS. *Vulgò*—Dew-berry. Running Brier.

Stem 4 to 8 or 10 feet long, slender, procumbent, often several from the same root running in different directions, fruticose, smoothish, purple, armed with many short sharp recurved prickles, and giving out numerous leafy flowering-branches, which are nearly erect, 2 to 4 or 6 inches long, pubescent, and somewhat aculeate. *Leaves* mostly ternate; *petioles* half an inch to an inch and half long, pubescent, often aculeate; *stipules* lance-linear, acuminate; *leaflets* 3 fourths of an inch to an inch and half long, and half an inch to an inch wide, varying from ovate to oval and sub-rhomboid,—the terminal one often cuneate-obovate and petiolate, the lateral ones sub-sessile,—all more or less pilose when young, especially on the under surface and margins, finally smoothish above. *Flowers* terminal and subterminal on the short erect branches, few and rather large, somewhat corymbose by the elongation of the lower axillary pedicels. *Calyx* pubescent; *segments* ovate, oblong, acute, or more frequently with a mucronate point, and a conspicuously white downy margin. *Petals* white, obovate, twice as long as the calyx. *Fruit* oblong, obtuse, or often roundish, half an inch to near an inch in diameter, carpels or acines large, very succulent and sweet, black when mature.

Hab. Rocky neglected old fields, &c. frequent. *Fl.* May. *Fr.* July.

Obs. The *fruit* of this is very fine, and a great favorite; but it is not the "Dew-berry" of England,—which is the R. *cæsius. L.* The plough-boy is apt to get well acquainted with this species,—by the long trailing stems, with their recurved prickles, drawing across his naked ankles! *expertus loquor.*—In our rocky wood lands we often find specimens very nearly related to this,—but every way more slender, with the young branches and leaves nearly smooth, the leaflets more lanceolate, and the flowers generally solitary on long slender terminal pedicels, with but few of the carpels, or acines, coming to perfection. When my Catalogue was published, I supposed they might be the R. *flagellaris*, of *Pursh, Ell.* &c. but further observation inclines me to the opinion that they are only a *woodland variety* of R. *trivialis.*

6. R. OBOVATUS, *Pers.* Stem procumbent, slender, hispid and aculeate; branches assurgent, slender and herbaceous; leaves mostly ternate; leaflets obovate, cuneate and subrhomboid, coarsely and unequally ser-

rate, smoothish, subcoriaceous and shining; racemes subpaniculate, terminal; flowers small; petals obovate-oblong; bracts ovate, or trifid. *Hook. Am.* 1. *p.* 180. Icon, *tab.* 60.

R. hispidus? *Willd. Sp.* 2. *p.* 1083. *Ait. Kew.* 3. *p.* 268. *Muhl. Catal. p.* 50. *Pursh, Am.* 1. *p.* 347. *Nutt. Gen.* 1. *p.* 308. *Torr. Fl.* 1. *p.* 489. *Ejusd. Comp. p.* 207. *Lindl. Ency. p.* 450. *Eat. Man. p.* 310. Also? *Pers. Syn.* 2. *p.* 51. Not of *DC.* nor *Beck.*

R. obovalis. *Mx. Am.* 1. *p.* 298. *DC. Prodr.* 2. *p.* 565. *Florul. Cestr. p.* 65. *Beck, Bot. p.* 104. Also, *Muhl. l. c. Pursh, Am.* 1. *p.* 349. *Nutt. Gen.* 1. *p.* 309. *Torr. Fl.* 1. *p.* 490. *Ejusd. Comp. p.* 207. *Eat. Man. p.* 311.

R. sempervirens. *Bigel. Bost. p.* 201. Also, *Eat. l. c.*

Obovate Rubus.

Stem 2 to 4 feet long, slender, procumbent, somewhat fruticose, purplish, very hispid (the bristles retrorse, and many of them finally becoming rigid recurved slender prickles), giving out numerous leafy flowering-branches, which are assurgent, or nearly erect, 3 to 6 or 8 inches long, very slender, herbaceous, somewhat hispid and minutely pubescent, with stipule-like scales at base. *Leaves* mostly ternate; *petioles* 1 to 2 inches long, more or less hispid and pubescent, often very hispid; *stipules* linear-lanceolate, entire, or sparingly incised; *leaflets* 3 fourths of an inch to near 2 inches (generally about an inch) in length, and half an inch to an inch and half wide, more or less obovate and cuneate, often rounded at apex, sometimes rather acute and rhomboidal, unequally serrate, entire near the base, smoothish, shining green above, rather paler beneath, slightly ferruginous on the nerves, and sparingly aculeate on the mid-rib, coriaceous when old, often living through the winter, but becoming purplish brown, and spotted, in the spring, the lateral ones on very short petioles, the petiole of the terminal one 2 or 3 times as long. *Flowers* sub-paniculate, terminal on the branches, often with 2 or 3 solitary pedicels in the axils below; *pedicels* slender, pubescent, bracteate at base (and sometimes with a minute bract near the middle); *bracts* ovate, entire, or often trifid. *Calyx* pubescent; *segments* elliptic-ovate, mucronate, with a narrow margin of white tomentum. *Petals* white, oblong, or obovate-oblong, obtuse, or sometimes emarginate, narrowed at base, about twice as long as the calyx. *Fruit* small, succulent, black when mature, rather acerb when much shaded, a number of the carpels or acines commonly abortive, and often the whole of them.

Hab. Swampy thickets, in the Mica-slate: frequent. *Fl.* June. *Fr.* Aug.

Obs. This occurs pretty frequently in shaded sphagnous swamps among the mica-slate hills; but is not generally diffused like the preceding,—to which it bears the nearest resemblance, though undoubtedly distinct. I have a strong suspicion, however, that our plant must be the R. *hispidus*, of *Linnæus;* and I judge from the description in Rees' Cyclopædia, by Sir *J. E. Smith*,—who described it with the Linnæan specimen before him.

* * * *Leaves simple, palmate-lobed.*

7. R. odoratus, *L.* Stem erect, branching, unarmed, glandular-hirsute; leaves 3 or 5-lobed, unequally serrate; stipules free, deciduous; corymbs terminal, compound, spreading, glandular-pilose and viscid; flowers large; calyx-segments ovate, long-acuminate; petals purple. *Beck, Bot. p.* 104. Icon, *Bart. Am.* 2. *tab.* 42.

Odorous Rubus. *Vulgò*—Rose-flowering Raspberry.

Root creeping. *Stem* 3 to 5 feet high, suffruticose, branched, not prickly, but clothed with a roughish glandular viscid pubescence. *Leaves* 4 to 8 inches long, and nearly as wide as long, simple, of a lively green color, mostly 5-lobed, cordate at base, more or less pilose, hirsute on the nerves beneath; lobes palmately spreading, acuminate, unequally serrate, serratures acuminate; *petioles* 2 to 4 or 6 inches long, glandular-hirsute; *stipules* lance-linear, acuminate, scarcely adnate to the petiole, deciduous. *Corymbs* compound, clothed with a purplish clammy glandular pubescence; *pedicels* with linear-lanceolate acuminate *bracts* at base. *Calyx* glandular-hispid; *segments* ovate, with a long acumination which is sometimes foliaceous. *Petals* mostly bright purple, sometimes palish, oval, or roundish-oval, large. *Stamens* very numerous, whitish. *Fruit* broad, hemispheric, concave beneath, on a large receptacle, bright red when mature (yellow, *Pursh*, honey-yellow, *Torr.*), succulent, but scanty or thinish, well-flavored.

Hab. Rocky hills; Brandywine: rare. *Fl.* June—July. *Fr.* July—Aug.

Obs. This differs widely, in habit, from any of the preceding; but the *fruit* is decidedly that of the *Raspberry*, or *Thimble-berry*. It is an ornamental plant, and often introduced into flower-gardens. The plant rarely perfects its fruit, under cultivation;—and, indeed, it is frequently abortive in its native localities. I have seen it on the mountains, in full bloom, and with ripe fruit, at the same time; and, as far as I have observed, the fruit is always bright red, or scarlet. It is very rare in this County,—having only been found, as yet, on the rocky banks of the Brandywine, above Coatesville,—where it was detected by Mr. Joshua Hoopes, in 1833. Eight or ten additional species are given as natives of the United States; and Prof. *Hooker* enumerates 21 species in British America.

242. ROSA. *L. Nutt. Gen.* 444.

[Supposed to be from the Celtic, *Rhos*, red; the prevailing color of the flowers.]

Calyx with the tube urceolate, contracted at the orifice; limb 5-parted; segments, before they expand, somewhat spirally imbricated at apex, mostly with a foliaceous appendage. *Petals* 5. *Carpels* numerous, bony, hispid, included in and attached to the tube of the calyx, which becomes fleshy and berry-like.

Fruticose: mostly aculeate; leaves alternate, mostly odd-pinnate, stipular; stipules adnate to the petiole; leaflets serrate; flowers terminal, solitary, or sub-corymbose. *Nat. Ord.* 73. *Lindl.* Rosaceæ.

* *Fruit sub-globose.*

1. R. parviflora, *Ehrh.* Leaflets oval, or lance-oval, pale green beneath; stipular prickles straight, needle-shaped; flowers mostly in pairs. *Beck, Bot. p.* 109.
R. humilis. *Marsh. Arbust. p.* 136.
R. caroliniana. *Mx. Am.* 1. *p.* 295. Not of *Bigel.*

Small-flowered Rosa. *Vulgò*—Dwarf Wild Rose.

Root creeping. *Stem* 1 to 2 feet high, slender, with greenish branches, more or less aculeate, prickles straight. *Leaves* odd-pinnate; *common petiole* pubescent, often aculeate, winged at base by the adnate stipules; *stipules* linear, the apex free, or produced, diverging, lanceolate, acuminate, with a pair of straight prickles at base, or often none. *Leaflets* 5 to 9 (mostly 7), 1 to near 2 inches long, and half an inch to an inch wide, generally oval, but varying to obovate and elliptic-lanceolate, acutely and nearly equally serrate, green and smooth above, pale and slightly pubescent beneath, pilose on the mid-rib, the terminal one petiolate, the lateral ones subsessile. *Flowers* terminal, mostly in pairs, sometimes solitary. *Calyx* and peduncles glandular-hispid; *segments* of the calyx lanceolate, long-acu-

minate, tomentose within and on the margin, terminating in long lance-linear foliaceous appendages, the 3 outer segments often laciniate, or deeply and pinnatifidly incised towards the apex. *Petals* pale red, about an inch long, and nearly as wide at apex, cuneate-obcordate, or obovate and emarginate. *Styles* densely hirsute, slightly exserted from the neck of the calyx-tube. *Fruit* sub-globose, about half an inch in diameter, dark red and nearly smooth when mature.

Hab. Borders of woods; old fields &c. frequent. *Fl.* June—July. *Fr.* Sept.

2. R. CAROLINA, *L.* Leaflets oblong-oval, or elliptic-lanceolate, somewhat glaucous beneath; stipular prickles recurved; flowers mostly in corymbs. *Beck, Bot. p.* 109.

R. palustris ? *Marsh. Arbust.* p. 135.

R. pennsylvanica. *Mx. Am.* 1. *p.* 296.

R. corymbosa. *Muhl. Catal. p.* 50. *Bart. Phil.* 1. *p.* 231. *Florul. Cestr. p.* 64.

R. caroliniana. *Bigel. Bost. p.* 197. Not of *Mx.*

CAROLINA ROSA. *Vulgò*—Swamp Rose.

Stem 4 to 6 feet high, aculeate, often stout, with numerous prickly purple branches; prickles strong, recurved, mostly 2 at the base of the stipules. *Leaflets* mostly 5 or 7, 1 to 2 or 2 and a half inches long, and half an inch to near an inch wide, generally elliptic-lanceolate, often acuminate, and more oblong than the preceding, but variable, mostly downy-pubescent and glaucous beneath, sometimes smoothish. *Flowers* mostly in terminal corymbs of 3 to 6 or 7. *Calyx* and peduncles glandular-hispid; *segments* of the calyx linear-lanceolate, long-acuminate, generally all entire, terminating in narrow foliaceous appendages. *Petals* purple, rather larger than the preceding, and nearly of the same form. *Fruit* depressed-globose, scarcely as large as in the preceding species, glandular-hispid, dark red and shining when mature.

Hab. Low swampy grounds, thickets, &c. frequent. *Fl.* June—July. *Fr.* Sept.

Obs. This is often a troublesome plant, in our wet meadows and low grounds; and not easily extirpated. It appears to be subject to several *varieties.*

* * *Fruit ovoid.*

3. R. RUBIGINOSA, *L.* Leaflets roundish-oval, or obovate, serrate and glandular-ciliate, with a ferruginous glandular pubescence beneath; stipules glandular-ciliate; prickles stout, somewhat recurved; flowers mostly solitary. *Beck, Bot. p.* 110.

R. suaveolens. *Pursh, Am.* 1. *p.* 346. *Ell. Sk.* 1. *p.* 566. *Florul. Cestr. p.* 64.

RUBIGINOUS, OR RUSSET ROSA. *Vulgò*— Sweet Brier. Eglantine. *Gall.*–Eglantin. *Germ.*–Die Wein Rose. *Hisp.* Escaramujo oloroso.

Stem 4 to 6 or 8 feet high (when trained up, much taller), armed with numerous stout unequal prickles, much branched; branches long, rather slender and flaccid, mostly yellowish green. *Prickles* long, stout, more or less recurved. *Leaflets* 5 to 7, 1 third to 3 fourths of an inch long, and 1 fourth to 2 thirds of an inch wide, ovate, oval, and obovate, somewhat pilose and green above, and clothed with a glandular russet pubescence beneath, somewhat viscid, and very fragrant, acutely serrate, the serratures glandular-ciliate. *Common petioles* aculeate, pubescent; *stipules* a little dilated above, glandular-ciliate. *Flowers* terminal, mostly solitary, sometimes in pairs, or threes. *Peduncles* mostly armed with stiff spreading bristles tipped with glands, and furnished with a pair of opposite lanceolate

acuminate glandular-ciliate *bracts* at base. *Calyx* smoothish; *segments* lanceolate, acuminate, villose within, glandular-ciliate, terminating in short foliaceous appendages, 2 or 3 of the outer segments often laciniate. *Petals* pale red, half an inch to 3 quarters in length, and about half an inch wide, cuneate-obovate, emarginate. *Fruit* ovoid, oval, or obovoid, one half to 2 thirds of an inch long, mostly smooth, reddish orange-color when mature.

Hab. Sandy banks; along road-sides, &c. not unfrequent. *Fl.* June. *Fr.* Sept.-Oct.

Obs. This foreign species, so generally admired for the fragrance of its leaves, is often cultivated about houses; and has long since become naturalized, in many localities. Eight or ten additional species have been enumerated in the U. States,—though I think it probable some of them are scarcely more than *varieties*.

CLASS XII. POLYANDRIA.

Order 1. Monogynia.

OVARY MOSTLY SUPERIOR.

243. TILIA. *L.* *Nutt. Gen.* 454.

[A name of obscure and uncertain derivation.]

Calyx 5-parted, deciduous. *Petals* 5, naked within, or each augmented with an internal scale, or accessory petal. *Filaments* distinct, or somewhat polyadelphous. *Ovary* globose, villose, 5-celled; cells 2-seeded. *Nut* coriaceous, or bony, by abortion 1-celled, 1 or 2-seeded.

Trees: leaves simple, alternate, petiolate, obliquely subcordate; peduncles axillary, solitary, cymose, each adnate at base to the mid-rib of a membranous bract which is free at summit. *Nat. Ord.* 29. *Lindl.* TILIACEÆ.

1. T. GLABRA, *Vent.* Leaves obliquely cordate, or truncate at base, abruptly acuminate, sharply serrate, subcoriaceous, smooth; flowers in pendulous cymes; petals truncate and crenate at apex, with each an internal accessory petal attached to the filaments at base; style as long as the petals; fruit roundish-oval. *Beck, Bot. p.* 59.

T. americana. *Marsh. Arbust. p.* 153. *Willd. Sp.* 2. *p.* 1162. *Pers. Syn.* 2. *p.* 63. *Ait. Kew.* 3. *p.* 299. *Mx. f. Sylva.* 3. *p.* 102. (ICON, *tab.* 131). *Bigel. Bost. p.* 214. *Lindl. Ency. p.* 466.

T. canadensis. *Mx. Am.* 1. *p.* 306. Also, *Pers. l. c.*

SMOOTH TILIA. *Vulgò*—Linden, or Linn. Bass wood. White wood.

Stem 40 to 60 or 80 feet high, and sometimes 3 feet or more in diameter, covered with a thick light-colored cinereous bark, the wood soft and white. *Leaves* 3 to 5 inches long, and nearly as wide as long, somewhat orbicular in their outline, acuminate, produced on one side at base, cordate, or often obliquely truncate, smooth on both sides, with small tufts of russet pubescence in the axils of the nerves beneath, serratures with slender acuminations; *petioles* 1 to 2 inches long, smooth. *Peduncles* 3 to 5 inches long, smooth, trichotomously cymose at apex, pendulous, somewhat geniculate near the middle, and from thence to the base adnate to the lower half of a light-colored linear-oblong membranous bract; *bracts* 3 to 4 or 5 inches long, and half an inch to an inch wide, rather obtuse, entire, often a little falcate, with a broadish striate midrib, strongly and reticulately veined, smooth; *pedicels* 1 third to 3 fourths of an inch long, articulated, the terminal portion pubescent. *Calyx* coriaceous, lobed with a short dense grey

tomentum, within villose, and hirsute at base; *segments* lance-ovate, acute, finally distinct, and somewhat gibbous at base. *Petals* yellowish white, lance-oblong, obtuse, crenate-serrate at apex, nearly twice as long as the calyx; *inner petals* linear, often somewhat spatulate, keeled, serrate at summit, nearly as long as the outer ones, attached to a fascicle of stamens at base. *Stamens* shorter than the petals. *Style* straight, cylindric, thickish, about as long as the petals, persistent; *stigma* subcapitate. *Nut* roundish-oval, about 1 fourth of an inch in diameter, covered with a short dense cinereous pubescence, bony, or ligneous, mostly 1-celled, and 1-seeded, by abortion. *Seed* ovoid, 1 to 2 lines in diameter, purplish brown, with a white suberose *hilum* on one side.

Hab. Rich woodlands, along Brandywine: rare. *Fl.* June. *Fr.* Sept—Oct.

Obs. In some districts of our country, where this tree abounds, the soft white *wood* is much used in making wooden bowls, and other domestic utensils. The *bark*, by maceration, separates into fibres, and is manufactured into a rude cordage. The inner bark also affords a mucilaginous liniment, by maceration in cold water, which has been much commended in burns and scalds. This species is sometimes cultivated as an ornamental shade; but it is not so much admired as the *European Linden*, by reason of its branches being more spreading and straggling. Three other species are enumerated in the U. States.

244. HELIANTHEMUM. *Tournef.* *Nutt. Gen.* 455.

[Gr. *Helios*, the sun, & *Anthemon*, a flower; the flowers opening only in sunshine.]

Calyx with 3 equal sepals, and often with 2 additional exterior ones which are bract-like, and mostly smaller. *Petals* 5 (sometimes wanting), spirally imbricated before they expand, often denticulate at apex. *Stigma* capitate, sometimes subsessile. *Ovary* triquetrous. *Capsule* 3-valved, with the dissepiments in the middle of the valves. *Seeds* angular.

Herbaceous, or fruticose: leaves alternate, or opposite, usually entire, naked, or stipular; flowers terminal, or lateral, sub-corymbose, or racemose. *Nut. Ord.* 134. *Lindl.* CISTINEÆ.

1. H. CANADENSE, *Mx.* Stem ascending; branches erect, roughish-pubescent; leaves alternate, without stipules, lance-oblong, or elliptic-lanceolate, acute, hirsutely pubescent, hoary-tomentose beneath, margin revolute; flowers terminal, corymbose, or crowded on short leafy lateral branches. *Beck, Bot. p.* 35.
Also? H. ramuliflorum. *Mx. Am.* 1 *p.* 307. *and others.*
Cistus canadensis. *Willd. Sp.* 2. *p.* 1199. *Ait. Kew.* 3. *p.* 310. *Bigel. Bost. p.* 212. *Eat. Man. p.* 96.
Also? *C.* ramuliflorum. *Eat. Man. p.* 97.

CANADIAN HELIANTHEMUM. *Vulgò*—Rock Rose. Frost weed.

Root perennial. *Stem* 6 to 12 or 18 inches high, herbaceous, slender, rigid, finally almost suffruticose, often dark purple, clothed with a short stellular or fasciculate pubescence. *Leaves* about an inch long, and 1 fourth to 1 third of an inch wide, entire, nearly sessile. *Flowers* terminal, somewhat corymbose; *pedicels* hoary-pubescent, solitary in the axils of small bract-like leaves. *Calyx* hirsutely pubescent; the 3 principal sepals ovate, short-acuminate, often with a yellow scarious margin on one side, the 2 outer ones narrow, linear. *Petals* yellow, large, cuneate-obovate, emarginate, or repand-denticulate. *Stamens* declined. *Style* short, erect. *Capsule* smooth, shining. *Seeds* somewhat triquetrous, scabrous-punctate, brown.

Hab. Mica-slate hills, and Serpentine rocks: rare. *Fl.* June. *Fr.* July—Aug.

Obs. This plant is pretty much confined to our dry Mica-slate hills,—and even there it is not often found with the terminal few-flowered corymbs, and large petals. The H. *ramuliflorum*, *Mx.* is, however, very common in those localities; and the more I have examined it, the more I am disposed to think it is only a peculiar state (or at most a *variety*) of the H. *canadense*. The H. *ramuliflorum* is generally more erect, with the flowers small, in axillary glomerules, or very much crowded on short leafy lateral branches, often apetalous, or rarely with visible petals; but otherwise seems to be essentially the same plant. I have occasionally seen it nearly destitute of lateral branches, and with large petals in the terminal flowers. Mr. *Elliott* suspected their affinity; and the remarks of Prof. *Hooker*, sustained by my own observations, induce me, at present, to consider the H. *ramuliflorum* as nothing more than a modification or variety of H. *canadense*. I have also collected specimens, near Mr. *John D. Steele's*, in West Bradford, which come near the description of H. *corymbosum*; but whether they are really more than a variety of the present species, I have not been able to determine. Three or four additional species are enumerated in the U. States.

Prof. *Eaton* and Dr. *Bigelow* have noticed the formation, in freezing weather, of curiously curved ice-chrystals near the root of H. *canadense*. I have not observed them in that plant; but have seen them very beautiful in the *Cunila mariana*, or Dittany. Mr. *Elliott*, also, remarked the same phenomenon in the *Conyza bifrons*. *Vide Ell. Sk.* 2. *p.* 322.

245. PORTULACA. *L. Nutt. Gen.* 457.

[A name of obscure and uncertain derivation.]

Calyx adnate to the base of the ovary, 2-parted, finally circumscissed at base and deciduous. *Petals* mostly 5, inserted on the calyx. *Stamens* 8 to 15. *Stigmas* 3 to 8. *Capsule* subglobose, 1-celled, circumscissed, many-seeded.

Herbaceous and fleshy: leaves alternate, or opposite, entire; flowers axillary, or terminating the branches, solitary, or aggregated. *Nat. Ord.* 144. *Lindl.* Portulaceæ.

1. P. oleracea, *L.* Leaves oblong-cuneate, obtuse, fleshy, smooth; axils and joints naked; flowers sessile. *Beck, Bot. p.* 130.

Oleraceous, or Pot-herb Portulaca. *Vulgò*—Purslane. *Gall.*—Pourpier potager. *Germ.*—Der Portulak. *Hisp.*—Verdolága.

Root annual. *Stem* 6 to 12 or 15 inches long, fleshy, terete, glabrous, mostly purple, prostrate, branched, with the summit a little assurgent. *Leaves* half an inch to near an inch long, and 1 fourth to 1 third of an inch wide, fleshy and smooth, subsessile, alternate and opposite, rather crowded near the flowers. *Flowers* in small clusters, axillary and terminal, bracteate at base. *Calyx* 2-parted, compressed at apex. *Petals* yellow, obovate-oblong, obtuse, or emarginate, longer than the calyx, slightly connate at base. *Stamens* 10 or 12, shorter than the petals, and adhering to them at base. *Stigmas* 5. *Capsule* opening horizontally, the base persistent. *Seeds* subreniform, with a small beak on one side, roughish-punctate, dark purple.

Hab. Gardens, and cultivated grounds: common. *Fl.* July—Aug. *Fr.* Sept.

Obs. Mr. *Nuttall* says this is indigenous on the saline and denudated plains of the Missouri; but it is undoubtedly, I think, an introduced plant here. It is sometimes, though rarely, used as a pot-herb; and is rather a troublesome weed in our gardens. No other species is known in the U. States.

216. TALINUM. *Adans.* *Nutt. Gen.* 458.

[Perhaps from the Gr. *thallo*, to be green; from the verdant habit of the plant.]

Calyx of 2 opposite ovate deciduous sepals. *Petals* 5, hypogynous, distinct, or slightly connected at base. *Stigma* trifid. *Capsule* 1-celled, 3-valved, many-seeded.

Herbaceous, or suffruticose: leaves alternate, entire, fleshy; flowers terminal, or axillary, cymose, or racemose. *Nat. Ord.* 144. *Lindl.* PORTULACEÆ.

1. T. TERETIFOLIUM, *Muhl.* Leaves terete, subulate, fleshy; peduncles elongated, naked; cyme terminal, somewhat dichotomous and corymbose. *Beck, Bot. p.* 130. Icon, *Florul. Cestr. tab.* 3.

CYLINDRICAL-LEAVED TALINUM.

Root perennial,—a few coarse fibres from the base of a short thick firm but somewhat fleshy *perennial stem* (or kind of exposed *rhizoma*) which is half an inch to an inch or more in length, often branched, and mostly of a purplish brown color. *Annual stem* 1 to 3 or 4 inches long, thick, fleshy, smooth and green, sometimes dichotomously branched. *Leaves* 1 to 2 inches long, and about a line in diameter, nearly cylindrical, acute, sessile and slightly produced at base, succulent, smooth and green, rather crowded above, and mostly a little incurved. *Peduncles* terminal and dichotomal, 3 to 6 or 8 inches long, slender, naked, terete and smooth, subumbellate at summit, with subdivisions somewhat dichotomously cymose; *branches* of the cyme 1 to 2 inches long, bracteate at base; *bracts* small, scarious, lance-ovate, acuminate, keeled, produced at base; *pedicels* about 1 third of an inch long, terete, clavate, mostly a central one in the bosom of the primary bracteles, and a dichotomal one in the forks of the principal subdivisions. *Sepals* ovate, acute. *Petals* bright purple, obovate-oblong, obtuse, narrowed and sometimes cuneate at base, nearly 3 times as long as the sepals, expanding for one day, then closing and shrivelling on the ovary. *Stamens* about 2 thirds the length of the petals. *Style* as long as the stamens; *stigma* trifid. *Capsule* trigonous-ovoid, or often trigonous-turbinate, smooth, 3-valved, each valve with a central ridge, or rudiment of a dissepiment, within. *Seeds* sub-reniform, dark purple, minutely punctate, slightly coated with a thin membranaceous *arillus* before maturity.

Hab. Serpentine rock: not common. *Fl.* June—Aug. *Fr.* Aug—Sept.

Obs. I have never met with this interesting little plant in any other situation than on the most naked and sterile banks of serpentine rock; but wherever such banks occur, the Talinum may almost certainly be found. In my Catalogue, I have said that the seeds are "not arillate;" but there is, in fact, a slight membranaceous covering (especially on the young seeds) which may perhaps be considered as a kind of arillus. This is the only known species in the U. States.

217. CHELIDONIUM. *L.* *Nutt. Gen.* 459.

[Gr. *Chelidon*, a swallow; its flowers appearing at the same time with that bird.]

Calyx of 2 caducous sepals. *Petals* 4. *Capsule* elongated (resembling a *silique*), 1-celled, 2-valved; valves opening from the base to the apex. *Seeds* numerous, with a glandular crest on one side.

Herbaceous: with a saffron colored sap; leaves alternate, pinnately dissected; peduncles umbellate, terminal and axillary. *Nat. Ord.* 4. *Lindl.* PAPAVERACEÆ.

1. C. MAJUS, *L.* Leaves pseudo-pinnate, glaucous, segments ovate, crenate-lobed; petals elliptic, entire. *Beck, Bot. p.* 21.

GREATER CHELIDONIUM. *Vulgò*—Celandine.

Gall.—Grande Eclaire. *Germ.*—Das Schoellkraut. *Hisp.*—Celidónia.

Root perennial, fusiform. *Stem* about 2 feet high, branched, somewhat pilose. *Leaves* 3 to 5 inches long, pinnately dissected; *leaflets*, or segments, mostly 5, crenately incised, smoothish, petiolate, decurrent, and often confluent at the midrib, the lateral ones more or less ovate, the terminal one cuneate-obovate, often 3-lobed. *Peduncles* 2 to 3 or 4 inches long, solitary, axillary, or opposite the leaves; *pedicels* 4 to 6 or 8, about an inch long, in an umbel terminating the common peduncle, with small involucrate *bracts* at base. *Sepals* subovate, concave, somewhat pilose externally, caducous. *Petals* yellow. *Capsules* about an inch long, narrow, sublinear, torulose.

Hab. Fence-rows; among rubbish, &c. frequent. *Fl.* May. *Fr.* July.

Obs. A naturalized foreigner. The orange-colored juice of the plant is a popular, and very *innocent*, application to warts, tetters, &c. The only species in the U. States,—if not the only one of the genus.

248. ARGEMONE. *L. Nutt. Gen.* 462.

[Greek, *Argema*, a disease of the eye; supposed to be relieved by this plant.]

Calyx of 3 cucullate aculeate caducous sepals. *Petals* 4 to 6. *Ovary* elliptic-ovoid, aculeate; *stigma* subsessile, 4 to 7-lobed, lobes radiately reflexed, persistent. *Capsule* obovoid-elliptic, spinose, 1-celled, 5-valved; valves opening at the apex. *Seeds* spherical.

Herbaceous: with a yellowish sap; leaves alternate, pinnatifid, and spinose; flowers solitary, terminal and axillary. *Nat. Ord.* 4. *Lindl.* PAPAVERACEÆ.

1. A. MEXICANA, *L.* Leaves sessile, obovate-oblong, sinuate-pinnatifid; segments angulate-dentate, spinose. *Beck, Bot. p.* 21.

MEXICAN ARGEMONE. *Vulgò*—Prickly Poppy.

Root annual. *Stem* about 2 feet high, branching, smooth and somewhat glaucous, armed with slender prickles. *Leaves* 3 to 5 inches long, and an inch and a half to 3 inches wide, sessile and somewhat amplexicaul, smooth, glaucous beneath, and along the nerves above; lobes angulate, and sinuate-dentate, with sharp spinose acuminations which appear to be formed by the involution of the margins; midrib and nerves aculeate. *Flowers* on leafy peduncles, or branches. *Sepals* oval, concave, aculeate, each with a cucullate production near the apex which terminates in a sharp stout spine. *Petals* mostly 6, yellow, about an inch long, broadly ovate and obtuse, cuneate at base. *Stamens* about as long as the ovary *Style* very short; *stigma* mostly 5-lobed; lobes reflected, obovate, concave, obtusely margined. *Capsule* an inch and a half to 2 inches long, and nearly an inch in diameter, spinose, opening at apex with 5 valves. *Seeds* numerous, globose, mucronate, reticulate.

Hab. Gardens, and cultivated lots: not very common. *Fl.* June. *Fr.* Aug.—Sept.

Obs. This plant has become partially naturalized; but does not seem to extend itself rapidly. It is the only recognized species of the genus;—though there is a white-flowered one in the South, which Mr. *Elliott* thought might prove to be specifically distinct.

249. PAPAVER. *L. Nutt. Gen.* 463.

[Celtic, *Papa*, pap; from its being added to the food of children, to induce sleep.]

Calyx of 2 concave caducous sepals. *Petals* 4. *Stigma* sessile, radiate, persistent. *Capsule* obovoid, 1-celled, opening by minute valves under the margin of the stigma. *Seeds* on *receptacles* which form incomplete dissepiments.

Herbaceous: with a lactescent sap; leaves alternate, mostly pinnatifid; flowers terminal, on long naked peduncles. *Nat. Ord.* 4. *Lindl.* PAPAVERACEÆ.

1. P. DUBIUM, *L.* Leaves pseudo-pinnate, segments lance-oblong, pinnatifidly incised, sessile, decurrent; stem with spreading hairs; peduncles with appressed bristly hairs; capsules obovoid-oblong, smooth. *DC. Prodr.* 1. *p.* 118.

DUBIOUS PAPAVER. *Vulgò*—Poppy. Field Poppy.

Gall.—Pavot bâtard. *Germ.*—Saat-Mohn. *Hispanicé*—Amapóla.

Root annual. *Stem* 1 to 2 feet high, somewhat branched below, clothed with slender spreading hairs. *Leaves* 2 to 5 inches long, deeply pinnatifid, or pseudo-pinnate, hairy; segments half an inch to an inch long, mostly incised, sometimes entire, acute, hairy, and mucronate with a slender bristle. *Peduncles* 6 to 12 inches long, flexuose, and nodding before flowering, leafless, hairy, the hairs below more slender and commonly spreading, those above, or near the flower, more rigid, erect, or closely appressed, and shining. *Sepals* ovate, hairy. *Petals* pale red or cinnabar-colored, about 3 fourths of an inch long, obovate, truncate and entire at apex. *Stigma* convex, mostly 6-rayed. *Capsule* half an inch to 3 quarters in length, and one fourth to 1 third of an inch in diameter, clavate, or finally obovoid-oblong.

Hab. Cultivated grounds; Downingtown: not common. *Fl.* May. *Fr.* July—Aug.

Obs. This foreigner has made its appearance in the cultivated grounds, about Downingtown; and, if neglected, may become a troublesome weed,—as it and the P. *Rhœas* are said to be, in Europe. There are, probably, no native species in the U. States.

250. SANGUINARIA. *L. Nutt. Gen.* 464.

[Latin, *Sanguis*, blood; in reference to the color of the sap.]

Calyx of 2 caducous sepals. *Petals* 8 to 12. *Stigma* subsessile, bifid, persistent. *Capsule* oblong, ventricose, tapering at each end, 1-celled, 2-valved; valves deciduous.

Herbaceous: with an orange red sap; leaf solitary, radical; scape naked, 1-flowered. *Nat. Ord.* 4. *Lindl.* PAPAVERACEÆ.

1. S. CANADENSIS, *L.* Leaf cordate-reniform, sinuate-lobed, smooth, glaucous beneath, on a long petiole. *Beck, Bot. p.* 21.

CANADIAN SANGUINARIA. *Vulgò*—Red-root. Turmeric. Indian Paint.

Root perennial, fibrous,—from a *rhizoma*, or reddish brown fleshy horizontal subterraneous stem, which is about 2 inches long, and half an inch in diameter. *Leaf* mostly solitary, about 3 inches long, and 4 or 5 inches broad, sinuate-lobed about half way to the base; lobes usually 7, entire, or repand on the margin; *petiole* at first shorter than the scape, finally 6 to 9 or 10 inches long, purplish, sheathed at base, together with the scape, by 2 or 3 oblong obtuse membranaceous *stipules*. *Scape* 4 to 6 or 8 inches long, slender, smooth, purplish. *Sepals* ovate-oblong, obtuse, membranaceous, smooth, very caducous. *Petals* white, usually 8 (sometimes 12 or 14) longer than the sepals, cuneate-oblong, the alternate ones interior and narrower. *Stamens* about as long as the ovary. *Ovary* narrowed at base, and tapering to a short style at apex; *stigma* bifid (or stigmas 2, *DC.*); lobes ovate, acute, erect, margins revolute, and covered with a short coarse pubescence. *Capsule* about an inch long. *Seeds* numerous, roundish, crested on one side, affixed to 2 marginal placentas, or receptacles, reddish brown when mature.

Hab. Rich woodlands: very common. *Fl.* April. *Fr.* June.

Obs. The *root* (or rather the subterraneous stem) of this plant possesses emetic and other medicinal properties,—which have been favorably noticed by several respectable physicians. It is the only species of the genus.

251. PODOPHYLLUM. *L.* *Nutt. Gen.* 465.

[Greek, *Pous, podos*, a foot, and *Phyllon*, a leaf; the leaf resembling a web foot.]

Calyx of 3 caducous sepals. *Petals* 6 to 9. *Stigma* subsessile, peltate, crenate, persistent. *Berry* somewhat fleshy, 1-celled.

Herbaceous: stem short; leaves terminal, in opposite pairs, or solitary, peltate, lobed; flower solitary, dichotomal, pedunculate. *Nat. Ord.* 8. *Lindl.* PODOPHYLLEÆ.

1. P. PELTATUM, *L.* Stem erect, mostly 2 leaved; leaves peltate, palmate-lobed; fruit oval. *Beck, Bot. p.* 18.

PELTATE PODOPHYLLUM. *Vulgò*—May Apple. Hog Apple.

Plant smooth. *Root* perennial, large, horizontal, creeping. *Stem* 8 to 12 or 15 inches high, naked, with sheathing stipules at base, dichotomous at summit,—or dividing into 2 *petioles* 2 to 4 inches in length, each bearing a peltate leaf. *Leaves* 4 to 6 inches in diameter, deeply divided into about 5 or 7 lobes; lobes cuneate-oblong, dentate and often bifid at apex, *Flower* solitary in the fork of the petioles; *peduncle* about an inch long, mostly recurved. *Sepals* ovate. *Petals* white, obovate, larger than the sepals. *Stamens* about as long as the ovary; *anthers* long, linear, adnate to the filaments. *Ovary* elliptic-ovoid; *stigma* subsessile, large, crenately lobed and convolute on the surface. *Berry* oval, somewhat compressed, an inch to an inch and a half long, smooth, yellowish when mature, succulent and pulpy, esculent, but not very palatable.

Hab. Moist woodlands; meadows, &c. frequent. *Fl.* May. *Fr.* August.

Obs. The stem is frequently simple,—terminating in a single leaf;—in which case it does not flower, or very rarely produces a lateral one, below the leaf. The thick creeping *root* possesses cathartic properties; and affords a good substitute for Jalap. It is probably the only species of the genus,—though a second one has been named, on the authority of *Rafinesque*, as growing in Louisiana.

252. NUPHAR. *Sm.* *Nutt. Gen.* 468.

[A name of obscure meaning,—said to be derived from the Arabic.]

Calyx of 5 or 6 sepals. *Petals* 10 to 18, inserted along with the stamens into a disk which surrounds the base of the ovary. *Stigma* sessile, peltate, orbicular, radiated. *Fruit* capsular, subcarnose, urceolate, many-celled, many-seeded.

Herbaceous aquatics: rhizoma creeping; leaves alternate, floating, or emerging, flowers solitary, pedunculate, emerging. *Nat. Ord.* 5. *Lindl.* NYMPHÆACEÆ.

1. N. ADVENA, *Ait.* Leaves cordate, with diverging lobes; petioles semicylindrical; sepals 6, unequal; petals numerous, small; fruit sulcate. *Beck, Bot. p.* 20.

Nymphæa advena. *Willd. Sp.* 2. *p.* 1152. *Mx. Am.* 1. *p.* 311. *Pers. Syn.* 2. *p.* 63. *Muhl. Catal. p.* 52.

STRANGE NUPHAR. *Vulgò*—Spatter-dock. Yellow Pond-lily.

Root perennial. *Rhizoma* very large (often several feet long, and 2 inches or more in diameter), creeping horizontally, with the roots on the under side, and the scars of former petioles on the upper. *Leaves* 8 to 10 or 12 inches long, and 6 to 8

or 9 inches wide, erect in shallow water, floating in deep water, smooth, coriaceous, deep green, cordate, rather obtuse, the sinus at base deep and acute, with the lobes diverging and somewhat truncate obliquely; *petioles* thick, semi-terete, of variable length. *Peduncles*, or scapes, 6 to 12 or 18 inches long, varying with the depth of the water. *Sepals* roundish-ovate, concave, subcoriaceous, roughish-tuberculate, the 3 outer ones green, yellowish at apex, the 3 inner ones much larger, orbicular, narrowed at base, petaloid, yellow, with tinges of green and purple. *Petals* about 14, yellow, cuneate-oblong, obtuse, fleshy, less than half the length of the sepals. *Stamens* numerous, in several series, about as long as the petals; *filaments* broad, spatulate-linear, truncate, at first erect, then recurved, reddish orange-color; *anthers* long, linear, adnate in pairs to the inner or upper side of the filaments. *Ovary* ovoid-oblong, angularly ribbed, or grooved; *stigma* sessile, a flat smooth orbicular *disk*, slightly umbilicate in the centre, and crenate or repand on the margin, half an inch to 3 quarters in diameter, marked with 12 to 15 radiating lines, which correspond with the number of cells in the fruit.

Hab. Pools, and still waters; Brandywine: frequent. *Fl.* May-Sep. *Fr.* Aug—Oct.

Obs. Two or three additional species are enumerated in the U. States.

253. ACTÆA. *L. Nutt. Gen.* 466.

[Greek, *Aktè*, the elder-bush; from a supposed resemblance in the foliage.]

Calyx of 4 caducous sepals. *Petals* 4 to 8 or 10 (sometimes wanting), caducous. *Carpels* many-seeded, dry and dehiscent, or berry-like and not opening.

Herbaceous: leaves decompound; flowers in terminal racemes. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

* *Carpels dry, dehiscent.*

1. A. RACEMOSA, *L.* Leaves ternately decompound; leaflets ovate-oblong; racemes compound, virgate; pedicels slender; petals minute; carpels dry, opening with two valves. *Beck, Bot. p.* 13.
Cimicifuga Serpentaria. *Pursh, Am. 2. p.* 372. *Lindl. Ency. p.* 476.
C. racemosa. *Nutt. Gen. 2. p.* 15. *Bart. Phil. 2. p.* 12. *Ell. Sk. 2. p.* 16. *Florul. Cestr. p.* 58. *Torr. Comp. p.* 219.
Macrotrys racemosa. *Eat. Man. p.* 217.
RACEMOSE ACTÆA. *Vulgò*—Tall Snake-root. Black Snake-root.

Root perennial, large, branching. *Stem* 4 to 6 feet high, slender, smooth, naked below and towards the summit, leafy near the middle, with 1 or 2 radical leaves on long erect petioles. *Leaves* triternate, petiolate; *leaflets* 2 to 4 inches long, and 1 to 2 inches wide, ovate-oblong, acute or acuminate, nearly smooth, unequally incised-dentate, teeth acuminate, the terminal leaflet larger, often 3-lobed. *Racemes* terminal and subterminal, 6 to 12 inches long, many-flowered, pubescent; *pedicels* about 1 third of an inch long, sometimes in pairs, or branched, each with a short subulate *bract* at base. *Sepals* roundish-ovate, concave, greenish white, caducous. *Petals* 4? white, very small, oblong, pedicellate, bifurcate at apex. *Stamens* numerous, white, twice as long as the ovary. *Fruit* ovoid, somewhat compressed, dry and capsular, obliquely beaked by the short thick persistent style.

Hab. Rich woodlands: common. *Fl.* June. *Fr.* September.

Obs. The white racemes of this plant, when in flower, are quite conspicuous in our woodlands. The plant, itself, has a heavy disagreeable odor, when bruised. The *root* is somewhat mucilaginous and astringent; and is a very popular medicine, both for man and beast. It is used in infusion, or decoction, chiefly as a pectoral remedy for human patients;—and many persons consider it almost a *panacea* for a sick cow. Its virtues, however, are probably much overrated.

* * *Carpels berry-like, not opening.*

2. A. ALBA, *Bigel.* Leaves twice and thrice ternate; leaflets ovate-lanceolate; raceme simple, oblong; pedicels thick; petals nearly as long as the stamens, truncate; carpels baccate, indehiscent, white. *Beck, Bot. p.* 14.

A. spicata, *var.* alba. *Willd. Sp.* 2. *p.* 1139. *Mx. Am.* 1. *p.* 308. *Pers. Syn.* 2. *p.* 61. *Ait. Kew.* 3. *p.* 286.

A. americana, *var.* alba. *Pursh, Am.* 2. *p.* 366. *Nutt. Gen.* 2. *p.* 10. *Bart. Phil.* 2. *p.* 9. *Torr. Comp. p.* 217. *Lindl. Ency. p.* 460.

A. pachypoda. *Ell. Sk.* 2. *p.* 15.

A. brachypetala, *var.* alba. *DC. Prodr.* 1. *p.* 65.

WHITE ACTÆA. *Vulgò*—White Cohosh. Bane-berry.

Root perennial. *Stem* 1 to 2 feet high, slender, smooth. *Leaves* ternately decompound, petiolate; *leaflets* 1 to 2 inches long, and half an inch to an inch wide, ovate-lanceolate with a slender acumination, smoothish, unequally incised-serrate, the terminal one often 3-lobed. *Raceme* 1 to 2 or 3 inches long, terminal, somewhat pubescent; *pedicels* 1 third to 3 fourths of an inch long, nearly as thick as the rachis or common peduncle, finally divaricate and purplish, with each a small lance-ovate acuminate *bract* at base. *Sepals* oblong-ovate, concave, white, caducous. *Petals* 4 to 8, white, oval, unguiculate, or often cuneate, dilated at apex and truncate, rather shorter than the stamens. *Stamens* white, twice as long as the ovary. *Ovary* oval; *stigma* sessile, large, somewhat 2 lobed. *Fruit* an oval berry, about 1 fourth of an inch in diameter, milk white, or often tipt with purple, when mature.

Hab. Rocky woodlands; Methem's Mill: rare. *Fl.* May. *Fr.* Aug.—Sept.

Obs. This is quite rare, here; and was first detected by Mr. JOSEPH JACOBS. In its foliage and habit, it has a strong resemblance to the preceding: but the *fruit* is very different, and would seem to warrant the separation made by several Botanists. Prof. *De Candolle* and *Hooker*, however, have kept them together. Two or three additional species are enumerated in the U. States.

[Diospyros. *Octandria Monogynia.*]

[Asarum. *Gynandria Polyandria.*]

Order 2. Di-Pentagynia.

254. AQUILEGIA. *L. Nutt. Gen.* 473.

[Latin, *Aquila*, an eagle; the spurs or nectaries resembling eagles' claws.]

Calyx of 5 petaloid deciduous sepals. *Petals* 5, bilabiate, gaping, with the upper lip large, flat, the lower one very small; produced downwards between the sepals into as many hollow spurs. *Ovaries* 5, superior. *Capsules* 5, erect, acuminate, many-seeded.

Herbaceous: leaves alternate, ternately compound; flowers terminal, scattered. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

1. A. CANADENSIS, *L.* Spurs straight; stamens exserted; styles filiform, as long as the stamens. *Beck, Bot. p.* 12. ICON, *Bart. Am.* 1. *tab.* 36.

CANADIAN AQUILEGIA. *Vulgò*—Wild Columbine.

Root perennial. *Stem* 12 to 18 inches high, paniculately branching, somewhat angular, smooth, or minutely pilose. *Leaves* petiolate, once or twice ternate;

common petiole dilated, and with a scarious margin, at base; *leaflets* smooth, glaucous beneath, an inch to an inch and a half long, 3-parted (upper ones simple), segments cuneate-oblong, spreading, trifid and crenately incised at apex, with the serratures obtuse, *petioles* slender. *Flowers* terminal on the branches, nodding. *Sepals* lance-ovate, acute, longer than the petals, purple externally, yellowish within. *Petals* hollow, open at throat, produced downwards into a straight acuminate spur nearly an inch long, slightly curved and callous at the point, purplish below, yellowish at summit. *Stamens* longer than the sepals, yellow. *Ovaries* pubescent; *styles* very slender, mostly a little longer than the stamens.

Hab. Rocky banks of streams; Brandywine: frequent. *Fl.* May. *Fr.* July.

Obs. Probably the only native species in the U. States. The A. *vulgaris*, however, is almost naturalized about our gardens.

255. ASCYRUM. *L. Nutt. Gen.* 475.

[Greek, *a*, privative, and *Skyros*, roughness; the plant being smooth to the touch.]

Calyx of 4 persistent sepals; the 2 outer ones large and foliaceous, the 2 inner ones small, membranaceous. *Petals* 4. *Stamens* somewhat polyadelphous. *Ovary* superior; *styles* 1 to 3 or 4. *Capsule* oblong, 1-celled, 2 or 3-valved, embraced by the calyx. *Seeds* numerous.

Shrubby, or suffruticose: leaves opposite, sessile, entire, punctate; flowers terminal, solitary, or corymbose. *Nat. Ord.* 36. *Lindl.* HYPERICINEÆ.

1. A. CRUX ANDREÆ, *L.* Stems numerous, diffuse, shrubby, terete; branches erect, suffruticose, ancipital; leaves obovate-oblong, obtuse, narrowed at base; corymbs terminal; styles 2. *Beck, Bot. p.* 62.

A. multicaule. *Mx. Am.* 2. *p.* 77. *Bart. Phil.* 2. *p.* 13. Also, *Willd. Sp.* 3. *p.* 1472. *Pers. Syn.* 2. *p.* 81. *Muhl. Catal. p.* 68.

A. hypericoides. *Ait. Kew.* 4. *p.* 430. Not? of *Willd. Pursh, Ell. &c*

ANDREW'S-CROSS ASCYRUM. *Vulgò*—St. Peter's Wort.

Stem 9 to 18 inches high, diffusely branching from the base; young branches assurgent or erect, slender, two-edged. *Leaves* half an inch to 3 quarters in length, and about 1 fourth of an inch wide, more or less obovate, or oblanceolate, smooth, with numerous dark-colored dots on both sides, mostly with a small glandular excrescence on each margin at base, and often with a fascicle of small leaves in the axils. *Flowers* in terminal few-flowered corymbs, and subterminal from the axils, on short peduncles, with 2 opposite subulate bracts below the calyx. *Outer sepals* leaflike, 1 third to near half an inch long, elliptic-ovate, rather acute, obscurely nerved, dotted; *inner sepals* very small, lance-ovate, acute, membranaceous. *Petals* yellow, linear-elliptic, or oblong, nerved, rather longer than the large sepals. *Stamens* as long as the ovary, slightly united in parcels at base. *Ovary* oblong; *styles* 2, short, erect. *Capsule* compressed, ovate-oblong, striate, 2-valved. *Seeds* small, oblong, cylindric, obtuse at each end, slightly rugose-pitted, of a dark greenish brown, or livid color.

Hab. Valley hill, N. of the Ship tavern: rare. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. Collected by D. TOWNSEND, Esq. in 1830. Our plant appears to be the *var. angustifolium*, of *Nutt.* and *DC.*—and I have a suspicion that the A. *hypericoides, L.* and the A. *stans, Mx.* are not specifically distinct. The Authors to whom I have access (*Aiton* and *Elliott* excepted) speak of the *outer sepals* being *smaller*,—which seems to me to be a palpable mistake. Three or four additional species are enumerated in the U. States.

256. HYPERICUM. *L. Nutt. Gen.* 476.
[A name of unknown derivation and meaning.]

Calyx of 5 sepals, or deeply 5-parted. *Petals* 5. *Stamens* polyadelphous, in 3 to 5 sets. *Ovary* superior; *styles* 3 to 5. *Capsule* membranaceous, 3 to 5-celled, many-seeded.

Herbaceous, or suffruticose: leaves opposite, mostly sessile, entire, often punctate; flowers mostly terminal and corymbose. *Nat. Ord.* 36. *Lindl.* HYPERICINEÆ.

1. H. VIRGINICUM, *L.* Stem terete; leaves ovate-elliptic, obtuse, semi-amplexicaul, subcordate at base, pellucid-punctate; peduncles axillary and terminal, few-flowered; stamens 9; filaments united at base in 3 sets, with an ovoid gland between each set. *Beck, Bot. p.* 60.
Elodea campanulata. *Pursh, Am.* 2. *p.* 379. Not *Elodea* of *Mx.* nor *Torr. Comp.*
E. virginica. *Nutt. Gen.* 2. *p.* 17. *Bart. Phil.* 2. *p.* 17. *Ell. Sk.* 2. *p.* 33.

VIRGINIAN HYPERICUM.

Whole plant mostly of a purplish hue. *Root* perennial. *Stem* 18 inches to 2 feet high, herbaceous but firm and inclining to suffruticose, terete, smooth, with a few opposite axillary branches. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, glaucous beneath, marked with numerous pellucid punctures. *Peduncles* terminal and axillary, mostly trichotomous or 3-flowered, the terminal one with the flowers corymbose-clustered; *pedicels* bracteate at base. *Sepals* linear-lanceolate, smooth, 5 to 7-nerved, not punctate. *Petals* dull orange-purple, with numerous parallel purple veins, pellucid-punctate, about twice as long as the calyx. *Stamens* 9; *filaments* in 3 parcels, connate at base, with a large reddish-orange gland between each parcel. *Styles* 3, distinct, about as long as the stamens. *Capsule* ovoid-oblong, 3-celled.

Hab. Wet, low grounds; Wynn's meadows: rare. *Fl.* July—Aug. *Fr.* Sept.—Oct.

Obs. Collected in Uwchlan, near the Red Lion, by Mr. JOSEPH JACOBS,—and subsequently at Wynn's meadows, by Mr. JOSHUA HOOPES.

2. H. PUNCTATUM, *Lam.* Stem terete, dotted with black; leaves elliptic-oblong, obtuse, semi-amplexicaul, pellucid-punctate, and dotted with black; corymbs terminal, brachiate, dense-flowered; petals dotted with black. *Beck, Bot. p.* 61. Not ! of *Willd.*
H. corymbosum. *Willd. Sp.* 3. *p.* 1457. *Muhl. Catal. p.* 68. *Pursh, Am.* 2. *p.* 377. *Nutt. Gen.* 2. *p.* 16. *Bart. Phil.* 2. *p.* 16. *Bigel. Bost. p.* 280. *Florul. Cestr. p.* 58. *Eat. Man. p.* 182. Also, *Pers. Syn.* 2. *p.* 89.
H. maculatum. *Mx. Am.* 2. *p.* 80. *Ait. Kew.* 4. *p.* 426. *Ell. Sk.* 2. *p.* 27. Also, *Pers. Syn.* 2. *p.* 90.
Also ? H. micranthum. *DC. Prodr.* 1. *p.* 546. *Hook. Am.* 1. *p.* 109. *Eat. Man. p.* 184.

PUNCTATE, OR DOTTED HYPERICUM.

Root perennial. *Stem* 18 inches to 2 feet high, brachiately branched above (often nearly simple); branches erect, corymbose. *Leaves* 1 to 2 inches long, and half an inch to 3 quarters wide, mostly obtuse. *Flowers* in dense terminal corymbs; *pedicels* with lance-linear or subulate *bracts* at base. *Sepals* lanceolate, united at base, marked with black dots, and also with linear pellucid punctures.

Petals pale yellow, with numerous oblong black dots, oblanceolate, about twice as long as the calyx. *Stamens* numerous. *Styles* 3. *Capsule* ovoid, 3-celled.

Hab. Open woodlands; fields, &c. frequent. *Fl.* July—Aug. *Fr.* Sept—Octo.

3. H. PERFORATUM, *L.* Stem ancipital; leaves linear-elliptic, rather obtuse, sessile, pellucid-punctate; flowers in terminal leafy paniculate corymbs; petals and anthers with dark purple dots; styles long, diverging. *Beck, Bot. p.* 61.

PERFORATED HYPERICUM. *Vulgò*—St. John's Wort.

Gall.–Mille-pertuis. *Germ.*–Das Johannes kraut. *Hisp.*–Corazoncillo.

Root perennial. *Stem* 1 to 3 feet high, often several from the same root, herbaceous but finally hard, obsoletely ancipital, or subterete with 2 opposite ridges decurrent from the midribs of the leaves, smooth, mostly yellowish green, with a few black dots, brachiately and corymbosely branched. *Leaves* 3 fourths of an inch to an inch and half long, and 1 fourth to near half an inch wide, obtuse, or often rather acute, with numerous pellucid punctures like perforations, and sparingly dotted with black. *Flowers* numerous, in paniculate corymbs: *pedicels* with subulate-linear *bracts* at base. *Sepals* lance-linear, acuminate, united at base, pellucid-punctate. *Petals* yellow, or orange-yellow, lance-oblong, more than twice as long as the calyx. *Stamens* numerous, polyadelphous, about as long as the styles. *Styles* 3. *Capsule* ovoid, 3-celled. *Seeds* ovoid-oblong, rugose-pitted.

Hab. Fields, and pastures: common. *Fl.* June—Sept. *Fr.* July—October.

Obs. This is an introduced and pernicious weed. The plant has a resinous odor; and is believed to produce troublesome sores on horses and horned cattle,—especially those which have white feet and noses—the skin of such being more tender, or irritable. The *dew* which collects on the plant appears to become acrid; as I have seen the backs of white cows covered with sores, wherever the bushy ends of their tails had been applied, after draggling through the St. John's wort. A *tincture* of the flowers and leaves has been used, it is said, with good effect in some complaints of the stomach and bowels.

4. H. QUINQUENERVIUM, *Walt.* Stem obscurely 4-angled, much branched; leaves ovate or oblong-ovate, rather obtuse, subcordate at base and closely sessile, mostly 5-nerved; flowers small, in dichotomous corymbs; sepals lance-linear; petals shorter than the calyx. *DC. Prodr.* 1. *p.* 550. H. parviflorum. *Willd. Sp.* 3. *p.* 1456. *Pers. Syn.* 2. *p.* 89. *Muhl. Catal. p.* 68. *Pursh, Am.* 2. *p.* 377. *Nutt. Gen.* 2. *p.* 16. *Bart. Phil.* 2. *p.* 16. *Ell. Sk.* 2. *p.* 24 *Bigel. Bost. p.* 280. *Florul. Cestr. p.* 58. *Beck, Bot. p.* 61. *Eat. Man. p.* 182.
H. mutilum. *Ait. Kew.* 4. *p.* 425. Also, *Willd. Sp.* 3. *p.* 1471, *Pers. Syn.* 2. *p.* 91.

FIVE-NERVED HYPERICUM.

Root annual? *Stem* 6 to 12 inches high, herbaceous, slender, with numerous alternate or opposite quadrangular spreading branches. *Leaves* half an inch to an inch long, and 1 third to 2 thirds of an inch wide, more or less ovate, and subamplexicaul, 5-nerved, minutely pellucid-punctate. *Flowers* in terminal leafy dichotomous corymbs; *pedicels* filiform (generally 1 dichotomal), with subulate *bracts* at base. *Sepals* lance-linear, rather acute, usually 3 of them larger or longer than the others. *Petals* yellow, small. *Styles* mostly 3. *Capsule* ovoid-oblong, rather longer than the calyx. *Seeds* numerous, small, cylindrical, obtuse at each end, striate and minutely rugose, tawny yellow.

Hab. Low grounds; along rivulets: frequent. *Fl.* July—Aug. *Fr.* Sept. Octo.

Obs. *Persoon* doubts whether this is more than a *variety* of H. *canadense*: but it seems to be sufficiently distinct.

5. H. CANADENSE, *L.* Stem erect, 4-angled, nearly simple; leaves sub-linear, rather obtuse, narrowed at base, mostly 3-nerved; corymb paniculate, elongated, dichotomous; sepals lanceolate; petals about as long as the calyx; capsule conical, nearly twice as long as the calyx. *Beck, Bot. p.* 61.

CANADIAN HYPERICUM.

Root annual? *Stem* 9 to 18 inches high, herbaceous, slender, simple, or with a few short opposite axillary branches near the summit, slightly 4-angled by the decurrence of the midrib and margins of the leaves. *Leaves* about an inch long, and 1 to 2 lines wide, nearly linear, minutely pellucid-punctate, often with fascicles of small leaves in the axils. *Flowers* in an oblong paniculate corymb, with the branches dichotomous; *pedicels* rather shorter and stouter than in the preceding (1 usually dichotomal), with subulate *bracts* at base. *Sepals* lanceolate, nearly equal. *Petals* yellow. *Styles* 3, short. *Capsule* elongated, conical, mostly dark purple. *Seeds* numerous, small, cylindrical, longitudinally striate, and minutely rugose, straw-colored.

Hab. Wet gravelly margins of rivulets: frequent. *Fl.* August. *Fr.* October.

6. H. SAROTHRA, *Mx.* Stem erect, obscurely 4-angled, much branched; leaves minute, subulate, appressed; flowers solitary, terminal and axillary, subsessile; petals longer than the calyx; stamens few; capsule more than twice as long as the calyx, acute, 1-celled. *Beck, Bot. p.* 61.

Sarothra gentianoides. *Willd. Sp.* 1. *p.* 1515. *Pers. Syn.* 1. *p.* 331. *Ait. Kew.* 2. *p.* 176. *Muhl. Catal. p.* 33. *Ell. Sk.* 1. *p.* 371. *Bigel. Bost. p.* 121. *Eat. Man. p.* 324.

S. hypericoides. *Nutt. Gen.* 1. *p.* 204. *Bart. Phil.* 1. *p.* 155. *Bart. Am.* 3. *p.* 59. ICON, *tab.* 92. *f.* 1. *Florul. Cestr. p.* 38.

BROOM HYPERICUM. *Vulgò*—Ground Pine. Nit-weed. Orange-grass.

Root annual. *Stem* 4 to 8 inches high, herbaceous, slender, brachiately and fastigiately branched from near the base; branches nearly erect, often di- or tri-chotomously subdivided, slender, angular or slightly winged by the decurrent leaves. *Leaves* 1 to 3 or 4 lines long, subulate, resembling stipules. *Flowers* solitary, sessile or subsessile, alternate in the axils of the small leaves, and terminal, often one dichotomal and pedicellate in the forks of the branches. *Sepals* lanceolate, keeled, nerved or striate, united at base. *Petals* yellow, lance-linear, obtuse, longer than the calyx. *Stamens* 5 to 10. *Styles* 3. *Capsule* more than twice as long as the calyx, slender, tapering to a point, mostly dark purple. *Seeds* small, oblong, terete, striate, minutely rugose, pale straw-color.

Hab. Sandy fields, and roadsides: frequent. *Fl.* July—Aug. *Fr.* September.

Obs. This seems pretty clearly to belong to the Hypericums,—although I do not find it among the *Hypericineæ*, of *De Candolle*. The species of this genus are numerous,—more than twenty additonal ones having been enumerated in the U. States; but the foregoing are all which have been hitherto detected in Chester County.

Order 3. Polygynia.

A. Flowers complete. † *Carpels fleshy, or pulpy.*

257. ASIMINA. *Adans. DC. Prodr.* 1. *p.* 87.
[A name coined by *Adanson;* supposed to be without meaning.]

Calyx deeply 3-parted, or rather of 3 sepals. *Petals* 6, spreading; inner ones smaller. *Anthers* subsessile. *Ovaries* superior, mostly 3, oblong,or ovoid; *stigmas* sessile. *Carpels* 3 (by abortion often 1 or 2), baccate or pulpy, oblong, sessile. *Seeds* several, oblong, compressed.

Small trees, or shrubs: leaves alternate, entire, without stipules; flowers solitary, axillary or lateral. *Nat. Ord.* 13. *Lindl.* Anonaceæ.

1. A. triloba, *Dunal.* Branches smoothish; leaves obovate-oblong and cuneate, acuminate; flowers on short peduncles; outer petals roundish-ovate, nearly 4 times as long as the calyx. *Beck, Bot. p.* 16. Annona triloba. *Marsh. Arbust. p.* 10. *Willd. Sp.* 2. *p.* 1267. *Ait. Kew.* 3. *p.* 335. *Muhl. Cat. p.* 53. *Mx. f. Syl.* 2 .*p.* 34. Icon, *tab.* 60. Orchidocarpum arietinum. *Mx. Am.* 1. *p.* 329.
Porcelia triloba. *Pers. Syn.* 2. *p.* 95. *Pursh, Am.* 2. *p.* 383. *Nutt. Gen.* 2. *p.* 19. *Bart. Phil.* 2. *p.* 18. *Eat. Man. p.* 278.

Three-lobed Asimina. *Vulgò*—Papaw. Custard Apple.

Stem 8 to 12 and sometimes 20 feet high, branched; branches alternate, slender and flexible, nearly smooth, marked with cinereous scars of the former petioles. *Leaves* 6 to 9 inches long, and 3 to 4 wide, cuneate-oblong, more or less obovate, sometimes nearly elliptic, with a short acumination, when young with a russet pubescence on the nerves and under surface, finally smooth; *petioles* pubescent, scarcely half an inch long. *Flowers* solitary, lateral, appearing rather before the leaves, on nodding or recurved pubescent peduncles 1 third to 3 fourths of an inch in length. *Sepals* ovate, clothed externally with a short dark-purple pubescence. *Petals* dark brownish-purple with tinges of yellow within, spreading or recurved, rugose, the 3 outer ones larger (about an inch long), pubescent externally. *Stamens* numerous, short, crowded in a globose head. *Ovaries* 3, oblong, pubescent, longer than the stamens; *stigmas* sessile. *Carpels* connate, becoming a fleshy 2 or 3-lobed *berry,*—or more usually (by abortion) a simple ovoid-oblong berry, 2 to 3 inches long, and an inch or more in diameter, somewhat gibbous with irregular protuberances, smooth, yellowish and pulpy when mature, esculent, and, under cultivation, not unpalatable.

Hab. Banks of streams; Brandywine; Schuylkill: not common. *Fl.* May. *Fr.* Aug.

Obs. This occurs along the Brandywine, above Downingtown, where it was collected by Mr. Joshua Hoopes, in 1827,—and also along the Schuylkill, at Black Rock, &c. but I have not met with it elswhere within the County. It is abundant on the banks of the Susquehanna. Three other species are enumerated in the U. States.

† † *Carpels dry, dehiscent; with arillate seeds.*

258. MAGNOLIA. *L. Nutt. Gen.* 479.
[Named in honor of Professor *Magnol;* a French Botanist.]

Calyx of 3 deciduous sepals. *Petals* 6 to 9 or 12, in concentric series. *Carpels* crowded and somewhat imbricated in an ovoid or oblong spike, 2-valved, 1-seeded. *Seeds* coated with a fleshy arillus, suspended by a long slender funiculus.

Trees: leaves alternate, entire, when young sheathed by opposite caducous stipules; flowers solitary, terminal. *Nat. Ord.* 15. *Lindl.* MAGNOLIACEÆ.

1. M. GLAUCA, *L.* Leaves lance-oval, glaucous beneath; petals 9 to 12, obovate, concave. *Beck, Bot. p.* 15. ICON, *Mx. f. Sylva.* 2. *tab.* 52. GLAUCOUS MAGNOLIA. *Vulgò*—Magnolia. Swamp Sassafras.

Stem 10 to fifteen, and sometimes 30 feet high, branching, with a smooth whitish or glaucous bark. *Leaves* 3 to 5 inches long, and an inch and a half to 2 inches wide, nearly elliptic, rather acute, sometimes obtuse, shining green above, very glaucous beneath, and when young the under surface clothed with a glaucous silky pubescence; *petioles* about 3 fourths of an inch long. *Flowers* very fragrant, on thick clavate pubescent peduncles about half an inch in length. *Sepals* oblong, concave, roughish-dotted, as long as the petals. *Petals* white, an inch to an inch and a half long, obovate. *Stamens* numerous; *filaments* short, with the point extending above the adnate anthers. *Ovaries* collected in an ovoid cone; *styles* very short, recurved. *Carpels* opening longitudinally. *Seeds* obovate, covered with a purple fleshy arillus, falling out of the carpels when mature, and hanging for some time by a long filiform funiculus.

Hab. Swamps, and moist woodlands: very rare. *Fl.* June. *Fr.* September.

Obs. This delightful little tree, though frequent in the swamps of New Castle County, on the South of us, is extremely rare in Chester County. There is a single specimen, of unusually large growth (between 30 and 40 feet high), which was detected by Mr. SAMUEL PEIRCE, in a woods in E. Marlborough, near his residence,—where it has every appearance of being indigenous. Mr. JOSHUA HOOPES informs me he has seen it on Beaver Creek,—a tributary of the Brandywine, above Downingtown. The *bark* is aromatic and bitter; and doubtless worthy of notice as a tonic. Six additional species of this splendid genus are natives of the U. States.

† † † *Carpels dry, indehiscent.*

259. LIRIODENDRON. *L. Nutt. Gen.* 480.

[Greek, *Leirion*, a lily, and *Dendron*, a tree; from its lily-like flowers.]

Calyx of 3 petaloid deciduous sepals. *Petals* mostly 6. *Carpels* samara-like, densely imbricated in a cone, 1 to 2-seeded, not opening.

Trees: leaves alternate, lobed, when young sheathed by large opposite caducous stipules; flowers solitary, terminal. *Nat. Ord.* 15. *Lindl.* MAGNOLIACEÆ.

1. L. TULIPIFERA, *L.* Leaves dilated, subcordate at base, 3-lobed, the middle lobe broad, emarginately truncate. *Beck, Bot. p.* 15. ICON, *Mx. f. Sylva.* 2. *tab.* 61.

TULIP-BEARING LIRIODENDRON. *Vulgò*—Poplar. Tulip-Poplar.

Stem 60 or 80 to 100 feet or more in height, and often 4 or 5 feet in diameter, old trees with spreading branches at summit, and often a great height without branches, the young trees with the branches forming regular conical tops. *Buds* large, compressed, obovate. *Leaves* 3 to five inches long, and 4 to 6 or 7 inches broad, nearly quadrangular in their outline, smooth, shining green above, paler beneath, rounded or subcordate at base, with a short diverging acuminate lobe (sometimes 2) on each side, and the broad central lobe emarginately truncate,—thus forming a somewhat 4-lobed leaf; *petioles* 2 to 3 inches long. *Flowers* large (about 2 inches long), campanulate, each with 2 caducous *bracts* at base. *Sepals* obovate-oblong, concave, pale yellowish green, as long as the petals, spreading, and at length reflexed, deciduous. *Petals* lance-obovate, mostly obtuse, greenish-yellow, stained with reddish orange below the middle. *Stamens* in a simple series, shorter than the petals; *filaments* with a lance-ovate point extending above the

long adnate anthers. *Ovaries* closely imbricated; *stigmas* sessile, recurved. *Carpels* 2-celled, samara-like, with a lance-oblong wing at apex, incurved at base, with a prominent internal ridge, imbricated in a cone, upon a slender fusiform receptacle,—one of the cells frequently obliterated, and both seeds often abortive

Hab. Rich woodlands: common. *Fl.* May. *Fr.* October.

Obs. The *wood* of this magnificent tree is highly valued in the mechanic arts, especially the *variety* called *yellow poplar*;—which is generally to be known by its thicker and more deeply furrowed bark. The *bark* is also a valuable aromatic bitter; and has been successfully used in intermittents. It is the only species in the U. States—if not the only one of the genus.

260. RANUNCULUS. *L.* *Nutt. Gen.* 491.

[Latin, *Rana*, a frog; the plant often growing where frogs abound.]

Calyx of 5 deciduous sepals, not produced at base. *Petals* 5 (sometimes 10), each with a nectariferous scale, or pore, at base on the inside. *Carpels* somewhat compressed, ovate, mucronate, striate, smooth, or tuberculate, arranged in a globose or cylindric head.

Herbaceous: mostly acrid; leaves alternate, entire, dentate, or multifid; peduncles terminal, axillary, or opposite the leaves. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

† *Carpels transversely rugose-striate.*

1. R. AQUATILIS, *L.* var. *capillaceus*, *DC.* Stem filiform, floating; leaves all submersed, divided into capillaceous segments; petals obovate-oblong, longer than the calyx. *Beck, Bot. p.* 7.
R. fluviatilis. *Willd. Sp.* 2. *p.* 1333. *Pers. Syn.* 2. *p.* 106. *Pursh, Am.* 2. *p.* 395. *Nutt. Gen.* 2. *p.* 23. *Bart. Phil.* 2. *p.* 26. *Bigel. Bost. p.* 227. *Florul. Cestr. p.* 61. *Eat. Man. p.* 297.
R. pantothrix. *Ell. Sk.* 2. *p.* 56. *Lindl? Ency. p.* 488.

WATER RANUNCULUS. *Vulgò*—River Crow-foot.

Root perennial. *Stems* numerous from the root, procumbently floating, 9 to 18 inches long, very slender, smooth, jointed, branching, and usually throwing out a couple of filiform roots at the joints. *Leaves* alternate, 1 at each joint, di- or tri-chotomously multifid, smooth, deep green; *segments* half an inch to an inch long, filiform or capillaceous, aggregated in little bundles or tufts; *petioles* 1 third of an inch to an inch long, dilated and sheathing at base. *Peduncles* opposite the leaves, 1 to 2 inches long. *Sepals* elliptic-ovate, concave, striate. *Petals* white, or ochroleucous, yellow at base, obovate-oblong, somewhat cuneate, with a nectariferous pore at base. *Carpels* few, smoothish, slightly rugose, with a short and often oblique beak.

Hab. Flowing waters; Brandywine: frequent. *Fl.* June—Aug. *Fr.* Aug—Sept.

Obs. I have often found this plant entirely submersed (and usually in swift running water) so deep that the flowers certainly never reached the surface. Prof. *De Candolle* enumerates 5 *varieties* of this species,—1 of which Prof. *Hooker* gives as natives of British America; but I have only met with the present one in this County.

† † *Carpels smooth.* * *Leaves undivided.*

2. R. FLAMMULA, *L.* Stem decumbent, radicating at the lower joints; leaves lanceolate, or ovate-lanceolate, the lower ones petiolate, the upper ones subsessile; petals longer than the calyx. *Beck, Bot. p.* 7. Not? of *Mx.*

Vulgò—Spear-wort. *Gallicè*—Petite Douve. *Germ.*—Das Speerkraut.

Whole plant glabrous, yellowish green. *Root* perennial, coarsely fibrous. *Stem* 1 to 2 feet long, assurgent, declined at base, sparingly branched, often dichotomous at summit. *Leaves* 2 or 3 to 6 or 7 inches long, and half an inch to an inch and a half wide, tapering to an acute point, entire, or often denticulate; the lower leaves mostly rounded and somewhat ovate at base, on petioles 2 to 3 or 4 inches long, sheathing at base; those above narrower lanceolate, and on short petioles; the upper ones nearly sessile. *Peduncles* axillary, or opposite the leaves, slender, 1 to 2 inches long; *flowers* rather small. *Petals* yellow, oblong, obtuse. *Carpels* in a roundish-ovoid head, mucronate, minutely punctate.

Hab. Wet miry places: ditches, &c. not unfrequent. *Fl.* July. *Fr.* Aug—Sept.

Obs. This is also subject to some varieties; and ours appears to be the var. *major*, *Hook. Am.* 1. *p.* 11. It is a very hot, acrid plant; and the distilled water is said to be a prompt and efficacious emetic, in cases where poisons have been swallowed. The bruised herb has also been used to raise blisters.

3. R. PUSILLUS, *Poir.* Stem erect; leaves all petiolate, the lower ones ovate, the upper ones lance-oblong; petals about as long as the calyx. *Beck, Bot. p.* 8.
R. flammula. *Mx. Am.* 1. 321. (*fide DC. Syst.* 1. *p.* 249. *sed qu?*)
R. humilis. *Pers. Syn.* 2. *p.* 102. *Muhl. Catal. p.* 54.

PUNY RANUNCULUS.

Plant smooth, yellowish green. *Root* perennial, of numerous very slender fibres. *Stem* 6 to 12 inches high, flaccid but erect, somewhat geniculate, dichotomously branching, growing in bunches, but only 1 stem from a root. *Lower leaves* half an inch to an inch long, and 1 third to 3 fourths of an inch wide, ovate, entire, on slender petioles 2 to 3 inches long; *upper leaves* an inch to an inch and half long, and 1 fourth to 1 third of an inch wide, linear-lanceolate, or lance-oblong, rather obtuse, obscurely repand-dentate, on short petioles, the uppermost ones nearly sessile. *Peduncles* often thickish, 1 to 2 inches long; *flowers* quite small. *Petals* yellow, scarcely longer than the calyx. *Carpels* in very small globose heads, not mucronate, very minutely punctate.

Hab. Wet meadows, along French Creek: rare. *Fl.* May. *Fr.* June—July.

Obs. Collected by D. TOWNSEND, Esq. in 1831.

* * *Leaves divided.*

4. R. ABORTIVUS, *L.* Glabrous; radical leaves on long petioles, mostly orbicular-cordate, or roundish-reniform, crenate, sometimes 3-lobed; stem leaves mostly 3-parted, segments linear-lanceolate, entire, or incised, upper ones sessile; calyx a little longer than the petals, reflexed. *Beck, Bot. p.* 8.
Also? R. nitidus. *Pursh, Am.* 2. *p.* 392. *Nutt. Gen.* 2. *p.* 23. Not of *Muhl. Ell.* nor *Hook.*

ABORTIVE RANUNCULUS.

Plant smooth and shining. *Root* perennial. *Stem* 9 to 15 inches high (sometimes 2 feet, or more), often several from the same root, branched above. *Radical leaves* usually roundish-reniform, 3 fourths of an inch to near 2 inches in diameter, rather wider than long, sometimes ternate, or obovate and 3-lobed, on *petioles* 2 to 4 and 6 inches long, dilated and sheathing at base; *stem leaves* deeply 3 or 5-parted, with lanceolate segments, and short dilated petioles, the uppermost ones sessile.

Peduncles opposite the leaves, stout, terete, 1 to 3 or 4 inches long; *flowers* quite small. *Sepals* ovate, concave, reflexed. *Petals* yellow, lance-ovate, shorter than the sepals, with each a tubular pouch-like nectary near the base. *Carpels* in ovoid-oblong heads, compressed, orbicular-ovate, smooth and shining, very minutely mucronate.

Hab. Moist woodlands, meadows, &c. frequent. *Fl.* April—May. *Fr.* June—July.

5. R. SCELERATUS, *L.* Glabrous; radical leaves on long petioles, 3-parted, segments cuneate, trifid, crenately sub-incised; stem leaves 3-parted, segments cuneate-oblong, crenately incised, upper ones linear-oblong, entire; calyx reflexed; carpels small, numerous, in an oblong cylindric head. *Beck, Bot. p.* 8.

HURTFUL RANUNCULUS. *Vulgò*—Celery-leaved Crow-foot.

Gall.—Grenouillette d'eau. *Germ.*—Der giftige Hahnenfuss.

Plant pale green, smooth and shining. *Root* perennial. *Stem* 12 to 18 inches high, thickish, fistular, branching, often dichotomous at summit, *Radical* and *lower stem leaves* 1 to 2 or 3 inches long, 3 to 5-parted, with spreading cuneate segments; *petioles* 3 to 5 inches long, dilated and sheathing at base; *upper leaves* 3-parted, on shorter petioles, the floral ones sessile, ternate, with sublinear entire leaflets. *Flowers* small. *Calyx* slightly pubescent, yellowish, finally reflexed. *Petals* pale yellow, scarcely longer than the calyx, with a round pore at base. *Carpels* closely arranged in terete elliptic-oblong smooth heads, small and numerous, keeled on the back, scarcely mucronate.

Hab. Moist places; along rivulets: frequent. *Fl.* May—Aug. *Fr.* July—Sept.

Obs. This species is common to Europe and America. It is very acrid, and has been supposed, in Europe, to be injurious to sheep, and other stock, if eaten by them,—which, I suspect, it rarely is.

6. R. REPENS, *L.* Stem mostly pilose, flagelliform, procumbent, radicating at the joints; flowering branches assurgent; leaves ternate; leaflets cuneate, trifid, incised-dentate, petiolate; peduncles striate-sulcate; calyx spreading; carpels with a straight point. *Beck, Bot. p.* 9.

CREEPING RANUNCULUS,

Gall. Pied de Corbeau. *Germ.* Hahnenfuss. *Hisp.* Ranunculo rastrero.

Root perennial, coarsely fibrous, and somewhat fasciculate. *Stem* 1 to 2 feet long, mostly several from the same root, at first somewhat erect, but finally extending into flaccid procumbent runners, with erect or assurgent branches, more or less pilose. *Leaves* ternate, on long hairy petioles; *leaflets* trifid, or 3-parted, incised, pilose on the nerves, on short petioles. *Peduncles* 1 to 2 or 3 inches long, sulcate, somewhat pilose. *Sepals* lance-ovate, yellowish, pubescent, scarious on the margin, spreading under the petals. *Petals* bright yellow, cuneate-obovate, twice as long as the calyx, with a nectariferous scale at base. *Carpels* in a globose head, compressed, margined, obliquely obovate, punctate, crowned with a straight margined beak.

Hab. Moist, shaded grounds; Brandywine: frequent. *Fl.* May. *Fr.* June.

Obs. This is often of a stout rank growth, on the margins of shaded miry places along the Brandywine; and is sometimes nearly smooth.

7. R. RECURVATUS, *Poir.* Stem erect, and, with the petioles, clothed with spreading hairs; leaves 3-parted, pilose with appressed hairs, seg-

ments rhomboid-ovate, incised-dentate, cuneate at base, the lateral ones 2 or 3-lobed; calyx finally reflexed; carpels with a recurved point. *Beck, Bot. p.* 10.

Also, R. saniculæformis. *Muhl. Catal. p.* 54.

Recurved Ranunculus.

Root perennial, coarsely fibrous, with a tuberous crown. *Stem* 9 to 15 inches high, hairy, branched and leafy at summit. *Leaves* somewhat pentagonal in their outline, 2 to 3 or 4 inches long, and as wide as long, 3-parted nearly to the base, the middle segment somewhat trifid, and the lateral ones mostly bifid about half way to the base; the *radical* leaves on petioles 3 to 6 inches long. *Flowers* small, at first on short peduncles, and inconspicuous among the leaves at summit; *peduncles* finally 1 to 2 inches long, clothed with appressed hairs. *Sepals* hairy, ovate-lanceolate, reflexed. *Petals* pale yellow, elliptic, mostly shorter than the sepals, sometimes very small and nearly abortive. *Carpels* in roundish-ovoid heads, compressed, margined, punctate, with a subulate beak which is recurved or hooked at the point.

Hab. Moist woodlands: frequent. *Fl.* May. *Fr.* June.

Obs. The foliage of this species often has a striking resemblance to that of our small variety of *Sanicula*,—which, doubtless, suggested *Muhlenberg's* synonym.

8. R. fascicularis, *Muhl.* Stem rather erect, elongating, somewhat branched, clothed with appressed hairs; leaves ternate, or quinate-pinnate, the lateral leaflets remote, 2 or 3-lobed, the terminal one deeply 3-parted; calyx spreading, pilose; carpels with a flat subulate nearly straight point. *Beck, Bot. p.* 10.

R. pennsylvanicus. *Florul. Cestr. p.* 60. Not of *Linn. and others.*

Fascicled Ranunculus.

Root perennial, fasciculate, of numerous coarse and somewhat fleshy fibres. *Stem* 3 or 4 to 12 or 15 inches high, erect, or oblique, mostly several from the same root, commencing flowering when young and short, subsequently elongated, and branching above, clothed with whitish and mostly appressed hairs, the pubescence somewhat silky on the young plant. *Radical leaves* on petioles 3 to 8 inches long, often ternate, the first ones sometimes only 3-parted, with cuneate-obovate segments, the subsequent ones quinate-pinnate; *leaflets* cuneate-oblong, or lance-oblong, variously incised, clothed with appressed hairs, the lateral leaflets rather remote from the terminal 3-parted one, and mostly petiolate. *Stem leaves* on petioles half an inch to 2 inches long; uppermost leaves subsessile, 3-parted, with lance-linear, entire, or incised segments. *Peduncles* axillary, or opposite the leaves, slightly angular, appressed-pilose, finally 1 to 2 or 3 inches long. *Calyx* spreading, hairy and greenish-yellow externally, yellow within. *Petals* bright yellow (often becoming pale), elliptic, or obovate-oblong, twice as long as the calyx, with a cuneate-obovate scale at base. *Carpels* rather large, in roundish-ovoid heads, compressed, obliquely obovate, smooth, margined, terminating in a flat acute beak which is nearly straight, or slightly curved either inwards or outwards, and about as long as the carpel.

Hab. Rocky, open woodlands: frequent. *Fl.* April—May. *Fr.* June.

Obs. I have some specimens, formerly collected in this County, which are apparently allied to this,—but with a more hirsute and spreading pubescence. They were given in my Catalogue as "R. *hispidus*"; but from their imperfect state I am unable to determine whether they are really distinct from the present species; which I think is subject to considerable variation, in its different stages. I have also met with a few kindred-looking specimens,—with narrower acutely incised-serrate leaflets, a spreading pubescence on the stems and petioles, and smoothish lance-ovate acuminate sepals,—which may, perhaps, belong to R. *marilandicus*, of *Poirct.*

9. R. BULBOSUS, *L.* Stem erect, hairy, tuberous at base; leaves ternate, or quinate-pinnate, leaflets 3 to 5-parted, segments trifid, or incised; peduncles sulcate; calyx reflexed, hairy. *Beck, Bot. p.* 11.

BULBOUS RANUNCULUS. *Vulgò*—Butter-cup. Crow-foot.

Gall.–Bassinet. *Germ.*-Der knollige Hahnenfuss. *Hisp.*–Boton de Oro.

Root perennial, with coarse fibres, tuberous at the neck. *Stem* 9 to 15 inches high, erect, several from the same root, branching, leafy, more or less pilose with appressed hairs. *Radical leaves* ternate, and quinate-pinnate, hairy, deeply parted and variously incised; segments cuneate, short, obtusely incised-lobed, on hairy *petioles* 2 or 3 to 6 inches long; *stem leaves* deeply and pinnatifidly incised, with narrow linear-lanceolate segments. *Peduncles* 1 to 3 or 4 inches long, terminal, or opposite the leaves, sometimes dichotomal, sulcate and angular, pilose with appressed hairs. *Calyx* reflexed, hirsute externally. *Petals* 5 (often numerous), deep shining yellow, cuneate-obovate, sometimes obcordate, with a cuneate-obovate scale at base. *Carpels* in a globose head, compressed, obovate, smooth, with a short acute recurved beak.

Hab. Fields and pastures: frequent. *Fl.* May. *Fr.* June—July.

Obs. This is a foreigner. The root is highly acrid, and has been recommended as a rubefacient. Some 15 or 20 additional species have been enumerated in the U. States—several of which probably require further examination. Prof. *Hooker* describes 30 species in British America.

B. FLOWERS INCOMPLETE: *Calyx corolla-like.* **a.** *Carpels dry.*

261. HEPATICA. *Dill. Nutt. Gen.* 490.

[Greek, *Hepar*, the liver; from a supposed resemblance in its leaves.]

Involucre near the flower, of 3 entire leaves, resembling a calyx. *Sepals* 6 to 9, petaloid, arranged in 2 or 3 series. *Ovaries* numerous. *Carpels* awnless or ecaudate.

Herbaceous: leaves radical, 3 lobed, somewhat perennial; scapes 1-flowered. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

1. H. TRILOBA, *Vill.* var. *obtusa.* Leaves cordate-reniform, 3-lobed, lobes entire, obtuse. *Beck, Bot. p.* 6. ICON, *Bart. Am.* 3. *tab.* 87. H. americana. *DC. Prodr.* 1. *p.* 22. *Eat. Man. p.* 171. Anemone hepatica. *Willd. Sp.* 2. *p.* 1272. *Mx. Am.* 1. *p.* 319. *Ait. Kew.* 3. *p.* 336. *Pers. Syn.* 2. *p.* 96. var. obtusa, *Muhl. Catal. p.* 53.

THREE-LOBED HEPATICA. *Vulgò*—Liver-wort. Liver-leaf.

Root perennial, coarsely fibrous. *Leaves* an inch and half to 2 inches long, and 2 to 3 inches wide, coriaceous, sparingly pilose (silky-villose when young), purplish beneath, nearly equally 3-lobed; lobes very entire, obliquely ovate, obtuse, the middle one rounded; *petioles* 3 to 5 inches long. *Scapes* several, 4 to 6 inches long, preceding the vernal leaves, silky-villose, sheathed at base, together with the young leaves, by ovate-oblong imbricated stipules. *Involucre* of 3 ovate leaves near the flower, resembling sepals, villose externally. *Sepals* elliptic-oblong, resembling petals, mostly blue, sometimes purplish, rarely white. *Carpels* lance-oblong, acuminate, pilose, substipitate.

Hab. Open woodlands: very common. *Fl.* April. *Fr.* May—June.

Obs. The *acute-lobed* variety, I believe, has not yet been observed in Chester County. This plant has acquired much notoriety of late, as a remedy in pulmonary disease; but its virtues have, doubtless, been greatly exaggerated. It is the only species in the U. States.

262. ANEMONE. *L. Nutt. Gen.* 484.

[Gr. *Anemos*, wind; the flowers being supposed to open only when the wind blows.]

Involucre distant from the flower, of 3 divided leaves. *Sepals* 5 to 15, petaloid. *Carpels* mostly awnless, sometimes awned, or caudate.

Herbaceous: leaves mostly radical, dissected; flowers terminal, solitary, or subcorymbose. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

1. A. NEMOROSA, *L.* var. *quinquefolia*, *Pursh.* Stem 1-flowered; leaves of the involucre ternate, petiolate, somewhat 5-parted, segments cuneate-lanceolate, acute, incised-dentate. *Beck*, *Bot. p.* 5.

A. quinquefolia. *Willd. Sp.* 2. *p.* 1281. *Pers. Syn.* 2. *p.* 97. *Muhl. Catal. p.* 54. *Bart. Phil.* 2. *p.* 20. *Bart. Am.* 2. *p.* 10. ICON, *tab.* 39. *f.* 2.

GROVE ANEMONE. *Vulgò*—Wind-flower. Wood Anemone.

Root perennial, fibrous,—from a horizontal *rhizoma* 2 to 3 inches long, and 1 to 2 or 3 lines in diameter. *Stem*, or scape, 3 to 6 inches high, slender, simple, mostly smooth, sometimes pubescent, with an involucre of 3 (rarely 4) verticillate leaves at summit. *Radical leaves* mostly (always?) none. *Leaves* of the *involucre* on petioles half an inch to an inch long, dissected into 3 sessile leaflets, the lateral ones bifid, sometimes parted nearly to the base; leaflets or segments smoothish, ciliate on the margin. *Flower* solitary, terminal, on a slender pubescent peduncle 1 to 2 inches long, from the centre or bosom of the involucre. *Sepals* usually 5 to 7, elliptic, resembling petals, white, often tinged with purple. *Carpels* pilose, lance-ovoid, mucronate, with the point recurved.

Hab. Moist woodlands, and thickets: frequent. *Fl.* April—May. *Fr.* June.

2. A. VIRGINIANA, *L.* Radical leaves 3-parted, segments ovate-lanceolate, acuminate, trifid and incised-dentate, those of the involucres similar, petiolate; peduncles virgate; sepals silky-villose externally; carpels in an ovoid-oblong head, connected by a dense tomentum. *Beck*, *Bot. p.* 6.

VIRGINIAN ANEMONE.

Root perennial, fibrous,—from a short subligneous tuber, or *rhizoma*. *Stem* 9 to 12 or 18 inches high, pilose, often dichotomously branched at summit, with long terminal peduncles. *Radical leaves* on angular pilose *petiolcs* 6 to 12 inches in length, parted into 3 subsessile leaflets; *leaflets* 2 to 3 or 4 inches long, and an inch to an inch and half wide, mostly trifid and irregularly incised, hairy. *Leaves* of the *involucres* on petioles half an inch to 3 inches long, the lower or primary involucre of 3 verticillate leaves, those of the branches mostly of 2 opposite leaves; *petioles* hairy, densely hirsute at base. *Peduncles* 4 to 8 or 12 inches long, clothed with erect or appressed hairs, densely pilose near the flower. *Sepals* 5, greenish white, or ochroleucous, subcoriaceous, 3 of them mostly elliptic-obovate, and 2 lance-ovate and acuminate. *Carpels* compressed, roundish-ovate, with subulate and somewhat incurved beaks, crowded in dense oblong nearly cylindric *heads* about 3 fourths of an inch in length, and near half an inch in diameter, clothed with a whitish dense wool, by which, at maturity, they are suspended from the receptacle in ragged dangling clusters.

Hab. Borders of woods: fence-rows, &c. frequent. *Fl.* June—July. *Fr.* Sept.

Obs. Seven or eight additional species are enumerated in the U. States.

263. THALICTRUM. *L. Nutt. Gen.* 485.

[Supposed to be from the Gr. *thallo*, to be green; in allusion to its verdant aspect.]

Often dioicous, or polygamous: *Involucre* beneath the flower none. *Sepals* mostly 4 or 5, petaloid, caducous. *Carpels* awnless or ecaudate, often longitudinally striate-sulcate, or ribbed, sometimes stipitate.

Herbaceous: leaves twice or thrice ternate, leaflets mostly 3-lobed; flowers terminal, subumbellate, corymbose, or paniculate. *Nat. Ord.* 3. *Lindl.* Ranunculaceæ.

* *Stamens shorter than the sepals.*

1. T. anemonoides, *Mx.* Root tuberous; radical leaves biternate, leaflets subcordate, 3-lobed; floral leaves resembling an involucre, opposite, or ternate, each trifoliate; flowers few, perfect, umbellate; sepals 8 or 10. *Beck, Bot. p.* 5.

Anemone thalictroides. *Willd. Sp.* 2. *p.* 1284. *Pers. Syn.* 2. *p.* 98. *Ait. Kew.* 3. *p.* 341. *Muhl. Catal. p.* 54. *Pursh, Am.* 2. *p.* 387. *Nutt. Gen.* 2. *p.* 21. *Bart. Phil.* 2. *p.* 19. *Bart. Am.* 2. *p.* 27. (Icon, *tab.* 44.) *Bigel. Bost. p.* 223. *Floral. Cestr. p.* 59. *Lindl. Ency. p.* 482. *Eat. Man. p.* 20.

Anemone-like Thalictrum.

Plant glabrous. *Root* perennial,—a few fibres from a fascicle of 2 to 4 or 5 whitish obovoid-oblong or clavate fleshy tubers. *Radical leaves* biternate; *leaflets* 3 fourths of an inch to an inch long, and nearly as wide as long, broad and somewhat 3-lobed at apex, obliquely cordate at base, on slender petioles half an inch to an inch long; *common petiole* 2 to 4 or 5 inches long, and, together with the scapes, embraced at base by lance-oblong imbricated membranaceous stipules. *Scapes* 4 to 6 or 8 inches long, nearly erect, usually 2 or 3 from the same root, slender, often purple. *Floral leaves* at the summit of the scape, mostly 2, opposite (sometimes 3 and verticillate), trifoliate; *leaflets* resembling the radical ones, on slender petioles half an inch to an inch and half long, on a very short common petiole,—appearing rather to be merely united at base. *Flowers* in a terminal umbel of 3 to 5 or 6 rays, or peduncles, which are from half an inch to an inch and half in length. *Sepals* mostly white, sometimes slightly tinged with purple, obovate-oblong, obtuse, twice as long as the stamens. *Carpels* aggregated, lance-oblong, acute, smooth, with prominent ribs, substipitate.

Hab. Open woodlands, and clearings: common. *Fl.* April—May. *Fr.* June.

Obs. This is a plant of rather equivocal generic character,—and forms a connecting link between *Anemone* and *Thalictrum.*

* * *Stamens longer than the sepals.*

2. T. dioicum, *L.* Leaves decompound; leaflets roundish-cordate, crenate-lobed, glabrous, glaucous beneath; flowers dioicous; filaments filiform; ovaries semi-ovoid, shorter than the styles. *Beck, Bot. p.* 5.

T. lævigatum. *Mx. Am.* 1. *p.* 322. Also, *Pers. Syn.* 2. *p.* 100. *Also,* T. purpurascens. *Willd. Pers. Pursh. DC. Hook. Beck, &c.*

Dioicous Thalictrum.

Plant glabrous, and often purplish. *Root* perennial, of numerous long coarse fibres. *Stem* 12 to 18 inches high, with sheathing stipules at base, sparingly branched at summit. *Leaves* mostly triternate; *leaflets* half an inch to 3 quarters in length, and rather wider than long, often roundish-reniform, rather thin and mem-

branaceous, coarsely and obtusely crenate-dentate, or sub-lobed; *common petiole* an inch and half to 3 inches long, with a membranous amplexicaul margin at base. *Flowers* terminal, paniculate; *peduncles* slender, somewhat umbellate, or in small fascicles. *Sepals* mostly 4, pale violet-purple, elliptic, scarcely half as long as the stamens. *Filaments* very slender and thread-like; *anthers* long, linear, mucronate, yellowish. *Carpels* semi-ovoid, striate-sulcate, acuminate with the persistent style.

Hab. Rich woodlands: frequent. *Fl.* April—May. *Fr.* June.

3. T. RUGOSUM, *Ait.* Leaves super-decompound; leaflets prominently veined beneath, cuneate-obovate and ovate oblong, 3-lobed at apex, the lateral ones often entire; flowers mostly dioicous, rather crowded; filaments filiform. *Beck, Bot. p.* 5.

T. carolinianum. *DC. Prodr.* 1. *p.* 12. Also, *Ell. Sk.* 2. *p.* 51. *Eat. Man. p.* 362.

RUGOSE THALICTRUM.

Root perennial. *Stem* 3 to 5 feet high, branching, striate, smooth. *Leaves* pinnately decompound; *leaflets* 3 fourths of an inch to an inch long, and half an inch to nearly an inch wide, petiolate, sometimes cordate at base, varying from cuneate-obovate to ovate-oblong, the terminal ones mostly 3-lobed at apex, lobes obtuse, or often rather acute, but not mucronate, the lateral leaflets often entire, all strongly and somewhat rugosely veined, glaucous, and minutely pubescent on the veins beneath, the margins entire and revolute. *Flowers* in rather crowded panicles, dioicous, or sometimes polygamous. *Sepals* white, elliptic-oblong, small. *Filaments* filiform (sometimes a little clavate?); *anthers* linear-oblong, mucronate. *Stigmas* linear, pubescent, with a serrulate margin on one side. *Carpels* obovoid-oblong, acute at each end, beaked with the persistent style, ribbed and sulcate, substipitate.

Hab. Along shaded, swampy rivulets: frequent. *Fl.* June—July. *Fr.* Sept.

Obs. This, it must be confessed, has much general resemblance to the following; and Prof. *Hooker* thinks they are not specifically distinct.

4. T. CORNUTI, *L.* Leaves super-decompound; leaflets obovate and ovate-oblong, 3-lobed at apex, lobes mucronate, lateral leaflets often entire, all somewhat pubescent beneath, with inconspicuous veins; flowers dioicous, or polygamous; filaments subclavate. *Beck, Bot. p.* 4. ICON, *Hook. Am.* 1. *tab.* 2.

T. polygamum. *Muhl. Catal. p.* 54.

T. pubescens. *Bart. Phil.* 2. *p.* 21. *Florul. Cestr. p.* 60. Also, *Pursh, Am.* 2. *p.* 388. *Nutt. Gen.* 2. *p.*21. *Torr. Comp. p.* 223. Not of *DC.*

T. corynellum. *DC. Prodr.* 1. *p.* 12. *Bigel. Bost. p.* 220. Also, *Eat. Man. p.* 262.

T. revolutum. *Ell. Sk.* 2. *p.* 49. Also, *DC. l. c. Eat. l. c.*

CORNUTUS' THALICTRUM. *Vulgò*—Meadow Rue.

Root perennial. *Stem* 4 to 6 feet high, stout (half an inch or more in diameter), fistular, sulcate-angled, somewhat pubescent. *Leaves* pinnately decompound; *leaflets* 3 fourths of an inch to an inch and half long, and half an inch to an inch wide, rarely subcordate at base, the terminal ones mostly 3-lobed at apex, the lobes mucronate, or rather with a small abrupt acumination, the lateral leaflets often entire, elliptic, or ovate-oblong, all bluish glaucous and more or less pubescent beneath,

the veins not prominent, margins entire and revolute, with the petioles usually more slender and rather longer than in the preceding species. *Flowers* in large loose terminal panicles, dioicous, or polygamous. *Sepals* greenish white, elliptic-ovate, small. *Filaments* clavate, or dilated near the anther; *anthers* linear-oblong, obtuse. *Stigmas* long, linear, pubescent. *Carpels* lance-ovoid, tapering at each end, beaked with the slender persistent style, ribbed and sulcate, substipitate.

Hab. Wet meadows; along rivulets: frequent. *Fl.* July. *Fr.* Sept.

Obs. The Thalictrums of this section all present *varieties* which have been described as distinct species; and we are under obligations to Prof. *Hooker* for reducing a number of them to their true character—and thereby removing much of the confusion that has hitherto existed respecting them. It is not certain, I believe, that we have any other well-determined species in the U. States.

264. CLEMATIS. *L. Nutt. Gen.* 483.

[Greek, *Klema*, a twig, or runner; in allusion to its pliant climbing stem.]

Involucre 0, or resembling a calyx under the flower. *Sepals* 4 to 8, colored. *Carpels* numerous, caudate, or terminated by a long, and mostly plumose, awn.

Herbaceous, or fruticose: mostly climbing; leaves opposite, ternate, or imperfectly pinnate, sometimes simple; flowers terminal, or axillary, sub-paniculate, or solitary, sometimes dioicous. *Nat. Ord.* 3. *Lindl.* RANUNCULACEÆ.

1. C. VIRGINIANA, *L.* Leaves ternate; leaflets lance-ovate, acuminate, coarsely incised-dentate, or lobed; flowers paniculate, dioicous. *Beck, Bot. p.* 4.

VIRGINIAN CLEMATIS. *Vulgò*—Virgin's Bower. Traveller's joy.

Root perennial. *Stem* 8 to 12 or 15 feet long, slender, with axillary divaricate branches, climbing over bushes, herbaceous and pubescent when young, finally suffruticose and smoothish, annual, filled with pith. *Leaves* ternate, on petioles 2 to 3 or 4 inches long; *leaflets* 1 to 3 inches long, and half an inch to 2 inches wide, petiolate, somewhat pubescent beneath and on the margin, the larger ones often a little cordate at base, the small upper ones sometimes entire. *Flowers* in opposite axillary pedunculate trichotomous corymbose panicles, dioicous by abortion; pedicels, and branches of the panicles, pubescent, bracteate at base. *Sepals* white, elliptic, or obovate-oblong, pubescent, longer than the stamens, and young pistils. *Ovaries* pubescent; *styles* clothed with long silky hairs, persistent, finally elongated; *stigmas* minutely pubescent, recurved. *Carpels* hirsute, substipitate, compressed, lance-ovate, acuminate, crowned with the whitish silky-plumose *styles*, which are very slender, recurved, and an inch or more in length.

Hab. Moist thickets; fence-rows, &c. frequent. *Fl.* July—Aug. *Fr.* Sept—Octo.

2. C. VIORNA, *L.* Leaves pinnate; leaflets in two or three distant pairs, ovate, entire, or 3-lobed, floral ones entire; peduncles 1-flowered; sepals connivent, thick, acuminate, with the apex recurved. *Beck, Bot. p.* 4.

Vulgò—Leather-flower.

Root perennial. *Stem* 6 to 8 or 10 feet long, climbing, pubescent, purple, finally suffruticose. *Leaves* pinnately compound, on long petioles; *leaflets* in 2 to 4 distant pairs, 1 to 3 inches long, and half an inch to 2 inches wide, ovate, or lance-ovate, acute, often 2 or 3-lobed, smoothish, on petioles about an inch long;—the common petiole often cirrhose at apex. *Flowers* solitary, axillary; *peduncles* 3 to 6 inches long, with a pair of small ovate entire leaves near the middle. *Sepals*

violet purple, pubescent, especially on the margin, thick and coriaceous, lanceolate, acuminate, with the point recurved. *Carpels* compressed, ovate, hirsute, crowned with the tawny plumose *styles*, which are from 1 to near 2 inches long.

Hab. Borders of woods; Londongrove: rare. *Fl.* July. *Fr.* September.

Obs. This was collected by Wm. Jackson, Esq. in 1828, on a stony bank on his farm, in Londongrove. It has, also, I am informed, been found in Kennett. Nine or ten additional species are enumerated in the U. States—chiefly in the South.

265. CALTHA. *L. Nutt. Gen.* 487.

[Greek, *Kalathos*, a cup, or basket; from the form of the flower.]

Calyx mostly of 5 petaloid sepals. *Ovaries* 5 to 10. *Carpels* capsular, compressed, spreading, 1-celled, many-seeded.

Herbaceous: leaves alternate, simple, reniform-cordate; flowers terminal, subcorymbose. *Nat. Ord.* 3. *Lindl.* Ranunculaceæ.

1. C. palustris, *L.* Stem nearly erect; leaves orbicular-cordate, or reniform, crenate, lobes obtuse; sepals oval. *Beck, Bot. p.* 11.

Marsh Caltha. *Vulgò*—Marsh Marygold. Colt's-foot.

Gall.–Souci des marais. *Germ.*–Dotterblume. *Hisp.*–Yerba Centella.

Plant glabrous. *Root* perennial, of numerous coarse fasciculate fibres. *Stem* 5 to 8 or 10 inches high, stout and succulent, sometimes dichotomously branching. *Radical leaves* 2 to 4 or 5 inches long, and often wider than long, rounded, cordate at base, crenate-dentate, sometimes nearly entire, enlarging, on *petioles* 3 to 6 and finally often 12 or 15 inches long, with sheathing stipules at base; *stem leaves* few, smaller and on shorter petioles. *Flowers* large, few, pedunculate and somewhat corymbose. *Sepals* bright yellow, oval, or ovate, obtuse, about twice as long as the stamens. *Carpels* oblong, compressed, spreading and a little recurved, obtuse, mucronate from the lower suture, opening at the upper suture. *Seeds* numerous, subovoid, dark purple.

Hab. Swampy springs, and wet meadows: frequent. *Fl.* April. *Fr.* May—June.

Obs. I have specimens with the leaves so nearly entire, and otherwise conformable, that I suspect *Pursh's* C. *integerrima* is scarcely more than a *variety*. A syrup, prepared from this plant, is a popular remedy for coughs. Three or four additional species are enumerated in the U. States.

b. *Carpels baccate.*

266. HYDRASTIS. *L. Nutt. Gen.* 486.

[Supposed to be from the Greek, *Hydor*, water; from its growing in moist places.]

Calyx of 3 caducous petaloid sepals. *Ovaries* in a dense roundish-ovoid head; *stigmas* subsessile, dilated, compressed, very obtuse, or rounded at apex. *Carpels* fleshy, or baccate, 1 or 2 seeded, cohering and forming a compound globose berry.

Herbaceous: leaves few, alternate near the summit of the stem, palmate; flower solitary, terminal. *Nat. Ord.* 3. *Lindl.* Ranunculaceæ.

1. H. canadensis, *L.* Leaves cordate-orbicular, palmate-lobed, lobes unequally serrate. *Beck, Bot. p.* 7.

Canadian Hydrastis. *Vulgò*—Yellow-root.

Root perennial, of numerous strong fibres from a thick fleshy oblong greenish-yellow tuber, or *rhizoma*. *Stem* 6 to 12 inches high, simple, pubescent, with oblong sheathing greenish-yellow stipules at base, and usually 2 (sometimes 3) leaves at summit, (occasionally, a *radical* leaf on a petiole nearly as long as the stem). *Leaves* 2 to 4 or 5 inches long, and 3 to 6 or 7 inches wide, dilated-cordate, somewhat pentagonal in the outline, palmate-lobed about half way to the base, pubescent; lobes mostly 5, broad, acute, unequally serrate, and often sub-lobed; *petiole* of the *lower leaf* 2 to 3 inches long, thick, terete, and nearly erect, giving the stem a dichotomous appearance; *upper leaf* sessile at the base of the peduncle. *Peduncle* about an inch long, stout, pubescent, sometimes with a small leaf near the middle. *Sepals* white, or tinged with purple, small and very caducous. *Stamens* numerous, crowded in several series, longer than the ovaries; *filaments* flat, dilated above, or linear-oblanceolate, with a midrib, and resembling narrow petals. *Ovaries* concrete, in a globose head; *style* very short, persistent; *stigmas* compressed, dilated, and rounded, with a slight groove on the summit. *Carpels* mostly 1-seeded, becoming succulent, and forming a globose compound berry half an inch to 3 quarters in diameter, purple when mature.

Hab. Rich moist woodlands: not common. *Fl.* April—May. *Fr.* July.

Obs. This was collected in the Great Valley, in 1828, by Messrs. JOSHUA HOOPES, and WASHINGTON TOWNSEND. It is also pretty abundant near Kimberton,—and was found, the present season (1836), near the forks of Brandywine, by Mr. HOOPES; but it is not generally distributed through the County. The *root* is bitter, and tonic; and the late Prof. *Barton* thought it might prove to be valuable in furnishing a *yellow dye*. It is the only known species of the genus.

CLASS XIII. DIDYNAMIA.

Order 1. Gymnospermia.*

1. OCYMUM TRIBE. *Corolla* sub-bilabiate; the 4 upper lobes flat, nearly equal; the lower one declined, flat, or concave, boat-shaped, or saccate. *Stamens* declined. OCYMOIDEÆ. *Benth.*

267. OCYMUM. *L. Gen. Pl.* 986.

[Supposed to be from the Greek, *Ozo*, to smell; in reference to its fragrance.]

Calyx 5-cleft; upper segment dilated, orbicular-ovate. *Corolla* with the upper lip 4-cleft; lower lip scarcely longer, declined, entire, flattish.

* The plants of this Order belong to a remarkably natural Family (*Nat. Ord.* 221. *Lindl.* LABIATÆ); and I have ventured to transfer to it a few Genera which are usually placed in *Diandria*,—but which are so palpably allied to the Didynamous plants, that even the youngest Botanists are often induced to look for them in this Class:—in fact they seem to be Diandrous only by abortion. The *Labiatæ* are generally *herbaceous* (sometimes *frutescent*), with *square stems*, and opposite branches; *leaves* opposite, without stipules, and mostly replete with receptacles of aromatic oil,—many species delightfully fragrant; *flowers* in opposite subsessile axillary cymes, often appearing verticillate; *calyx* tubular, persistent; *corolla* monopetalous, generally bilabiate; *stamens* mostly 4, inserted on the corolla, 2 of them longer (sometimes the upper pair wanting); *ovary* deeply 4-lobed; *style* 1, proceeding from the base of the lobes of the ovary; *stigma* bifid, mostly acute; *fruit* 1 to 4 small nuts, or *Akenes*, resembling naked seeds, at the bottom of the persistent calyx. In grouping the genera into *Tribes*, I have adopted the arrangement of Mr. *Bentham's* elaborate and valuable work on the *Labiatæ*.

Stamens declined; lower ones longer; upper *filaments* often toothed at base. *Akenes* compressed, elliptic-ovate, smoothish.

1. O. BASILICUM, L. *Leaves ovate-oblong, subdentate, smooth, petiolate; calyx ciliate.* Benth. Lab. p. 4.

ROYAL OCYMUM. Vulgò—*Sweet Basil.*

Gallicè—*Basilic.* Germ. *Gemeines Basilienkraut.* Hisp. *Albaháca.*

Root *annual.* Stem 6 *to* 12 *inches high, often much branched above, smoothish at base, pubescent above with short reflexed hairs.* Leaves *half an inch to an inch long,* and 1 *third to half an inch wide, tapering at each end, obscurely and irregularly dentate, sometimes entire, smoothish, punctate beneath;* petioles 1 *third to* 2 *thirds of an inch long, somewhat ciliate.* Flowers *in simple terminal interrupted racemes;* pedicels *pubescent, shorter than the calyx;* bracts *ovate, acuminate, petiolate, ciliate, often purple, rather longer than the calyx.* Calyx *inflated-campanulate, reflexed after flowering.* Corolla *whitish, or bluish white, nearly twice as long as the calyx.* Akenes *minutely punctate.*

Hab. *Gardens: frequent.* Fl. *July.* Fr. *September.*

Obs. *This fragrant little plant is often cultivated for culinary purposes. There are no native species in the U. States.*

268. LAVANDULA. *L. Gen. Pl.* 965.

[Latin, *lavare*, to wash; the distilled water being used for that purpose.]

Calyx tubular, ovoid-cylindric, ribbed, with 5 short teeth, the upper tooth sometimes dilated and produced at apex. *Corolla* with the upper lip 2-lobed, lower one 3-lobed; lobes nearly equal, spreading; tube exserted. *Stamens* included; *filaments* smooth, not toothed. *Disk* concave, with 4 fleshy scales on the margin. *Akenes* smooth, adnate to the scales of the disk.

1. L. SPICA, DC. *Leaves linear-oblanceolate, entire, sessile, tapering to the base; spike somewhat interrupted; floral leaves lance-linear, the upper ones shorter than the calyx; bracts linear-subulate.* Benth. Lab. p. 149.

SPIKE LAVANDULA. Vulgò—*Lavender.*

Gallicè—*La Lavande.* Germ. *Der Lavandel.* Hisp. *Espliégo.*

Root *perennial.* Stem *suffruticose, branching from the base; branches erect,* 12 *to* 18 *inches high,* 4-*angled, subtomentose and hoary, leafy at base, nearly naked above.* Leaves 1 *to* 2 *inches long,* and 1 *to* 3 *or* 4 *lines wide, crowded at the base of the branches, revolute on the margin, clothed with a short hoary tomentum.* Flowers *in a terminal imbricated spike about an inch in length, with* 1 *or* 2 *distant verticils below;* pedicels *short.* Calyx *tubular, hoary-pubescent, closely ribbed and grooved, teeth short and villose.* Corolla *blue, pubescent, nearly twice as long as the calyx.*

Hab. *Gardens: frequent.* Fl. *July.* Fr. *September.*

Obs. *This is often cultivated for its cordial and stomachic properties. The distilled water is also highly esteemed for its pungent fragrance. There are no native species in the U. States.*

2. Mentha Tribe. *Corolla* sub-campanulate, or funnel-form; limb 4 or 5-cleft, lobes nearly equal; tube scarcely longer than the calyx. *Stamens* 4, or sometimes 2, distant, straight, diverging. Menthoideæ. *Benth.*

269. MENTHA. *L. Nutt. Gen.* 496.

[*Minthe*, a daughter of Cocytus; fabled to have been changed into this herb.]

Calyx campanulate, or tubular, 5-toothed, equal; orifice naked, or rarely villose. *Corolla* 4-cleft, nearly regular, the broadest lobe emarginate. *Stamens* distant, exserted, or included; *filaments* naked; *anthers* with 2 parallel cells.

* *Flowers in terminal interrupted spikes.*

1. M. viridis, *L.* Leaves oblong-lanceolate, acutely incised-serrate, subsessile; spikes slender, elongated, attenuated at summit; bracts subulate. *Beck, Bot. p.* 272.

M. tenuis? *Mx. Am. 2. p. 2. Pursh, Am. 2. p.* 405. *Nutt. Gen. 2. p.* 26. *Ell. Sk. 2. p.* 72. Also? *Pers. Syn. 2. p.* 119. *Eat. Man. p.* 224.

Also? M. gracilis. *Muhl. Catal. p.* 55. *Bart. Phil. 2. p.* 216.

Green Mentha. *Vulgò*—Spear-mint. Common Mint.

Gall.–Baume verte. *Germ.*–Die Spitzmünze. *Hisp.*–Menta puntiaguda.

Root perennial, creeping. *Stem* 1 to 2 feet high, erect, branching, smoothish, mostly green. *Leaves* 1 to 2 or 3 inches long, and half an inch to near an inch wide, oblong-lanceolate, very acute, with slender serratures, smoothish, sometimes a little hirsute beneath, punctate, palish green, sessile, or subsessile. *Spikes* terminal, numerous, appearing somewhat paniculate, 2 to 4 inches long, slender, tapering to a point. *Flowers* in distant verticils. *Bracts* subulate, with setaceous points, pilose-ciliate. *Calyx* smoothish, or sometimes rather hirsute. *Corolla* pale purple, slender. *Stamens* of variable length, mostly shorter than the corolla. *Style* much exserted.

Hab. Moist grounds; along rivulets, &c. frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This pleasant aromatic plant is becoming extensively naturalized; and is deservedly popular as a domestic medicine, in relieving nausea, &c. It is subject to *varieties*,—and probably the M. *tenuis* of *Michaux*, *Elliott*, &c. and the M. *gracilis*, *Muhl.* may be of them.

2. M. piperita, *Sm.* Leaves ovate-lanceolate, serrate, petiolate; spikes oblong, obtuse; bracts lanceolate; calyx glandular-dotted. *Beck, Bot. p.* 272. Not? of *L.*

Pepper Mentha. *Vulgò*—Pepper-Mint.

Gallicè—La Menthe. *Germ.*—Pfeffermünze. *Hisp.*—Menta piperita.

Root perennial, creeping. *Stem* 1 to 2 feet high, branching, mostly smoothish and dark purple, sometimes pubescent. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, more or less ovate, rather acute, smoothish, dark green; *petioles* 1 fourth to half an inch long. *Spikes* half an inch to an inch or more in length, and about half an inch in diameter, terminal, solitary, cylindric, obtuse; verticils crowded, except the lower one which is often a little distant. *Bracts* linear-lanceolate, ciliate. *Calyx* sprinkled with yellow resinous dots. *Corolla* purple, larger than in the preceding. *Stamens* included. *Style* exserted.

Hab. Low moist grounds: not uncommon. *Fl.* August. *Fr.* Sept—October.

Obs. This most grateful aromatic, is apparently naturalized in many localities; and is often cultivated about houses and gardens. The essential oil, and distilled water, are well known for their stomachic properties; and the infusion of the dried herb, administered cold, in small portions, is one of the best remedies for nausea that I have ever tried.

* * *Flowers in axillary verticils.*

3. M. CANADENSIS, *L.* Leaves lanceolate, acute at each end, serrate, petiolate; stamens exserted. *Beck, Bot. p.* 272.
M. borealis. *Mx. Am.* 2. *p.* 2. *Bart. Phil.* 2. *p.* 30. *Bigel. Bost. p.* 234. *Florul. Cestr. p.* 66. *Lindl. Ency. p.* 500. Also, *Pursh, Am.* 2. *p.* 405. *Nutt. Gen.* 2. *p.* 26. *Torr. Comp. p.* 233. *Beck, l. c. Eat. Man. p.* 224.
Also, M. acutifolia, *var.* borealis. *Pers. Syn.* 2. *p.* 120.

CANADIAN MENTHA.

Plant greyish green, pubescent. *Root* perennial. *Stem* 9 to 18 inches long, ascending, or decumbent, simple, or often with numerous long branches, angles obtuse and retrorsely hirsute. *Leaves* 1 to 3 inches long, and half an inch to an inch wide, somewhat oval-lanceolate, serrate, entire and tapering at base, resinous-punctate, pilose, especially on the midrib, and nerves beneath; *petioles* 1 third to 3 fourths of an inch long, slightly margined, pilose, hairs on the petioles and leaves erect, or pointing forwards. *Flowers* in axillary pedunculate cymes, appearing verticillate; *common peduncle* 1 to 2 or 3 lines long; *bracts* lance-linear, pilose-ciliate. *Calyx* hirsute, resinous-dotted; segments hirsute-ciliate. *Corolla* pale purple, or purplish white. *Stamens* 1 third to 1 half longer than the corolla. *Style* longer than the stamens.

Hab. Wet, low grounds; along Brandywine: frequent. *Fl.* Aug. *Fr.* Sept—Oct.

Obs. This species is not so pleasantly aromatic as the preceding,—its flavor more resembling that of *Hedeoma*, or Pennyroyal. It is doubtful whether we have any other native species in the U. States. The M. *arvensis*, noticed in my Catalogue, was evidently but the outcast of a garden,—and seems to have become extinct. Mr. GEO. W. HALL found a species near Rocky Hill, in E. Goshen, which had strayed into the meadows, and become almost naturalized. It is a stout erect branching plant, entirely smooth, with broad-ovate petiolate leaves, large terminal capitate spikes, and bright purple flowers,—agreeing pretty well with the description of M. *rubra, Sm.*—or possibly it may be the M. *citrata, Ehrh. Willd.* and *Bentham*; M. *odorata, Sm. in Rees' Cyclopædia.*

270. LYCOPUS. *L. Nutt. Gen.* 21.

[Gr. *Lykos*, a wolf, and *Pous*, a foot; from a fancied resemblance in the leaves.]

Calyx tubular-campanulate, 4 or 5-toothed. *Corolla* tubular; limb nearly equal, 4-lobed; upper lobe broader and emarginate. *Stamens* 2, distant, simple. *Akenes* 4, obliquely truncate at apex.

1. L. VIRGINICUS, *L.* Leaves broad-lanceolate, serrate-dentate, tapering and entire at base; calyx mostly 4-toothed; teeth shorter than the akenes, not spinescent. *Beck, Bot. p.* 271.
Also, L. uniflorus. *Mx. Am.* 1. *p.* 14. *Pers.* 1. *p.* 24. *Beck, l. c.* &c.
Also, L. pumilus. *Pursh, Am.* 1. *p.* 16. *Nutt. Gen.* 1. *p.* 15.

VIRGINIAN LYCOPUS. *Vulgò*—Bugle weed.

Root perennial, creeping. *Stem* 12 to 18 inches high, simple, or sparingly branched, roughish-pubescent, quadrangular, with the angles obtuse, and sides concave. *Leaves* an inch and half to 4 inches long, and 3 fourths of an inch to an inch an half wide, coarsely serrate-dentate, with an entire long narrow cuneate base, smoothish, and, with the stem, often dark purple. *Flowers* minute, in small dense verticils. *Calyx* shorter than the corolla; segments acute, but not spinescent. *Corolla* white. *Akenes* projecting above the calyx, when mature.

Hab. Swamps, and moist woodlands: frequent. *Fl.* July. *Fr.* Sept—October.

Obs. This is said to be a prominent article in the Materia Medica of certain German Empirics, in the good city of Lancaster,—who prescribe the infusion as a sovereign remedy for what they term a "*dry Liver*" (*Nodus vindice dignus*!)—an infirmity which, they allege, afflicts a large proportion of those credulous persons who resort thither,—or, being unable to go, despatch a trusty messenger with a vial of their urine.

2. L. SINUATUS, *Ell.* Leaves oblong-lanceolate, sinuate-dentate, lower ones pinnatifidly incised; calyx 5-toothed; teeth subspinescently acuminate, longer than the akenes. *Benth. Lab. p.* 187.

L. europæus. *Mx. Am.* 1. *p.* 14. *Pursh, Am.* 1. *p.* 16. *Bigel. Bost. p.* 9. *Beck, Bot. p.* 271. *Eat. Man. p.* 215. var. angustifolius. *Torr. Fl.* 1. *p.* 21. *Ejusd. Comp. p.* 21.

L. americanus. *Muhl. Catal. p.* 3. *Bart. Phil.* 1. *p.* 12.

Also, L. vulgaris. *Nutt. Gen.* 1. *p.* 15. Not? of *Pers.*

Also, L. exaltatus. *Pursh, Am. Suppl. p.* 727. *Ell. Sk.* 1. *p.* 26. *Nutt. l. c.* Not of *Linn.*

Also, L. angustifolius. *Ell. l. c. Nutt. l. c.*

SINUATE LYCOPUS. *Vulgò*—Water Horehound.

Root perennial. *Stem* 1 to 2 feet high, branching, smoothish, acutely quadrangular, with the sides concave. *Leaves* an inch and half to 3 inches long, and 1 third to 3 fourths of an inch wide, tapering at each end, narrowed to a petiole at base, smoothish, punctate, somewhat sinuate-dentate, the teeth long and distant. *Flowers* very small, in dense verticils. *Calyx* about as long as the corolla, scabrous; segments with a prominent midrib, terminating in a sharp spinescent acumination. *Corolla* white, often tinged with purple, pubescent within. *Stamens* shorter than the corolla. *Akenes* compressed, triquetrous-cuneate, obliquely truncate, shorter than the calyx.

Hab. Moist low grounds: frequent. *Fl.* July. *Fr.* September.

Obs. This seems to be quite distinct from my European specimens of L. *europæus*. When my Catalogue was prepared, I mistook it for *Pursh's* var. *quercifolius*, of the preceding species. One or two additional species, though not very well authenticated, are enumerated in the U. States.

3. MONARDA TRIBE. *Corolla* bilabiate. *Stamens* 2 fertile, ascending; the upper pair abortive. *Anthers* linear, with two contiguous cells, divaricate at base, and confluent at apex,—or halved, and the cells separated by a long linear *connectivum* which is transversely articulated with the summit of the filament. MONARDEÆ. *Benth.*

271. SALVIA. *L. Nutt. Gen.* 25.

[Latin, *Salvo*, to save, or heal; from its supposed healing properties.]

Calyx subcampanulate, bilabiate; upper lip mostly 3-toothed, lower lip bifid, throat naked. *Corolla* ringent; upper lip erect, straight, or falcate, and vaulted. *Stamens* 2; *anthers* dimidiate; the *cells* separated by a long linear transverse connectivum.

1. S. OFFICINALIS, L. *Stem hoary-tomentose, leafy; leaves lance-oblong, crenulate, rugose; upper lip of the corolla as long as the lower one, somewhat vaulted.* Benth. Lab. p. 208.

OFFICINAL SALVIA. Vulgò—*Sage. Garden Sage.*

Gallicè—*La Sauge.* Germanicè—*Die Salbei.* Hispanicè—*Salvia.*

Root *perennial.* Stems 1 *to* 2 *feet high, numerous, or branching from the base, forming dense bunches, frutescent below.* Leaves 1 *to* 2 *and a half inches long, and half an inch to* 3 *quarters wide, rather obtuse, sometimes lobed near the base, crenulate, and rugosely veined, clothed with a short pubescence, greyish green; upper or floral leaves sessile, the others on* petioles *about an inch long.* Flowers *verticillate, or in interrupted terminal racemes;* verticils 10 *to* 20 *flowered; inner pedicels longer;* bracts *ovate, acuminate, membranaceous, deciduous.* Calyx *campanulate, ribbed, pubescent, sprinkled with glandular dots, often purple; teeth acuminate.* Corolla *mostly violet-purple, pubescent; upper lip vaulted, lower lip 3-lobed, middle lobe dilated, emarginate; tube exserted, dilated, with a hairy ring at base within.* Stamens *ascending, the* 2 *lower ones fertile, the* 2 *upper ones minute, abortive.* Style *smooth, with the apex exserted, unequally bifid, violet-purple.*

Hab. *Gardens: common.* Fl. *May—June.* Fr. *July—August.*

Obs. *Generally cultivated; and much used in domestic economy. The infusion makes a good gargle; and is otherwise moderately medicinal.*

2. S. LYRATA, *L.* Stem retrorsely pilose, nearly leaflesss; radical leaves lyrate, erose-dentate; upper lip of the corolla short, straight. *Beck, Bot. p.* 283.

LYRATE SALVIA. *Vulgò*—Meadow Sage. Cancer weed.

Root perennial. *Stem* 1 to 2 feet high, erect, square, with the sides concave, and angles obtuse, somewhat branched near the summit, and often with branches from the crown of the root. *Radical leaves* spreading, 2 to 4 inches long, and 1 to 2 or 3 inches wide, ovate, or obovate-oblong, obtuse, lyrate-pinnatifid, or sinuate-lobed, often purplish, hairy, on hirsute *petioles* 1 to 3 inches long; *stem leaves* mostly a single pair near the base of the raceme, elliptic-oblong, repand-dentate, subsessile *Flowers* verticillate, in a terminal interrupted raceme 4 to 8 or 10 inches long; *verticils* about 6-flowered, distant; *bracts* lance-ovate, acute. *Calyx* tubular-campanulate, pilose, nodding, becoming dry and parchment-like; upper lip broad, with 3 short distant teeth, lower lip with 2 lanceolate acuminate teeth. *Corolla* bluish, or violet-purple, pubescent; upper lip short, not vaulted; tube much exserted. *Stamens* 2, (the upper ones entirely wanting?); *anthers* blue. *Style* exserted, unequally bifid at apex. *Akenes* somewhat triquetrous-ovate, compressed, externally convex, dark brown.

Hab. Meadows; woodlands, &c. frequent. *Fl.* May—June. *Fr.* July.

Obs. This species is regarded as a *weed*, in our meadows. Mr. *Elliott* says the fresh radical leaves bruised and applied to warts, will generally destroy them. Five or six additional species are enumerated in the U. States.

272. MONARDA. *L. Nutt. Gen.* 24.
[Named in honor of *Nicholas Monardez*; a Spanish Botanist.]

Calyx tubular, cylindric, elongated, striate, nearly equally 5-toothed. *Corolla* ringent; upper lip linear, embracing the filaments; lower lip broader, reflexed, 3-lobed, lateral lobes ovate, obtuse, middle lobe narrower, oblong; tube slender and mostly exserted. *Stamens* 2, mostly exserted from the upper lip of the corolla; *anthers* 2-celled; cells divaricate at base, connate at apex.

1. M. FISTULOSA, *L.* Leaves ovate-lanceolate, acute, or acuminate, obtuse at base, more or less pubescent, petiolate; bracts sessile, somewhat colored; calyx slightly curved, scarcely colored, with the orifice hirsute. *Beck, Bot. p.* 276.
Also ? M. oblongata. *Willd. Sp.* 1. *p.* 125. *Pers. Syn.* 1. *p.* 24. *Ait. Kew.* 1. *p.* 51. *Muhl. Catal. p.* 3. *Pursh, Am.* 1. *p.* 18. *Nutt. Gen.* 1. *p.* 17. *Torr. Fl.* 1. *p.* 25. *Ejusd. Comp. p.* 22. *Lindl. Ency. p.* 22. *Eat. Man. p.* 28.
Also (*fide Benth.*), M. rugosa. *Willd. l. c. Pers. l. c. Ait. l. c. Muhl. l. c. Pursh, l. c. p.* 17. *Nutt. l. c. Lindl. l. c. Eat. l. c. p.* 229.
Also (*fide Benth.*), M. clinopodia. *Willd. l. c. Pers. l. c. Ait. l. c. Muhl. l. c. Pursh, l. c. Ell. Sk.* 1. *p.* 28. *Nutt. l. c. Torr. ll. cc. Lindl. l. c. Beck, l. c. Eat. l. c.*
M. allophylla ? *Mx. Am.* 1. *p.* 16. *Bigel. Bost. p.* 9. Also ? *Pers. l. c. Beck, l. c.*
Also ? M. mollis. *Pursh, l. c. p.* 18. *Nutt. l. c. Ell. l. c. p.* 29. *Florul. Cestr. p.* 4. *Lindl. l. c. p.* 20. var. mollis. *Benth. Lab. p.* 317.
Also (*fide Benth.*), M. purpurea. *Pursh, l. c. p.* 17. *Nutt. l. c. Eat. l. c.* Not of *Lam.*
FISTULAR MONARDA. *Vulgò*—Horse Mint. Wild Burgamot.

Root perennial. *Stem* 2 to 3 feet high, branched, mostly hairy, especially at the joints, and towards the summit, sometimes nearly smooth below, fistular (the *var. mollis*, or *oblongata*, solid with pith). *Leaves* 2 to 3 or 4 inches long, and 3 fourths of an inch to 2 inches wide, more or less ovate, serrate, hairy, punctate beneath; *petioles* half an inch to an inch long, pilose-ciliate. *Flowers* on short pedicels, in broad dense terminal heads (1 to near 2 inches in diameter), which are sometimes proliferous; *outer bracts* lanceolate, or lance-ovate, acute, entire, or subdentate, sessile, partially colored, purplish, or often greenish white; *inner bracts* narrow, sub linear, ciliate, with filiform points. *Calyx* about half an inch long, nearly cylindric, slender, a little curved, striate, with 5 acute teeth, hairy at the orifice. *Corolla* varying from violet-purple to flesh colored, and greenish white, pubescent; upper lip linear, sub-falcate; tube slender, exserted. *Stamens* 2, ascending, a little exserted, the *filaments* enclosed in the upper lip of the corolla. *Style* exserted, unequally bifid at apex.

Hab. Fence-rows; borders of thickets, &c. frequent. *Fl.* July. *Fr.* September.

Obs. This is a variable plant; and Mr. *Bentham* has reduced several species, of preceding Authors, into this one. Even the M. *mollis*, *L. Pursh*, &c. he considers as nothing more than a *variety*,—and I have not ventured, in opposition to such high authority, to retain it as a distinct species: But I must say that it seems to possess some striking and constant characters of its own. It is not so common as the true M. *fistulosa;* and I find the plant to be generally smaller and more hoary-pubescent,—the stem more slender, and constantly solid with pith,—the leaves narrower and more oblong,—the heads of flowers more dense, more conspicuously

punctate, and rarely, if ever, proliferous,—the outer bracts shorter and more ovate,—and the upper lip of the corolla with a villose tuft at apex. Both varieties are indiscriminately called by the common name of Horse Mint, here. They are pleasantly fragrant; and the infusion is quite a popular remedy for calculous complaints. Five or six additional species are enumerated in the U. States.

4. Satureja Tribe. *Calyx* 5-toothed and equal, or bilabiate with the upper lip 3-toothed and the lower one bifid. *Corolla* sub-bilabiate; upper lip erect, flat, entire, or bifidly emarginate; lower lip spreading, trifid, lobes nearly equal; tube about as long as the calyx. Stamens 4, or sometimes 2, distant, straight, diverging. Satureineæ. *Benth.*

273. PYCNANTHEMUM. *Mx. Nutt. Gen.* 509.

[Gr. *Pyknos*, dense, *Anthemon*, a flower; the flowers being in dense cymose heads.]

Heads of flowers surrounded by an *involucre* of many bracts. *Calyx* striate, 5-toothed. *Corolla* with the upper lip nearly entire; lower lip trifid, the middle lobe longer. *Stamens* distant; *anthers* with parallel cells.

1. P. incanum, *Mx.* Leaves petiolate, oblong-ovate, acute, sub-serrate, tomentose-pubescent, the upper ones hoary on both sides; flowers in compound pedunculate cymose heads; bracts subulate-linear. *Beck, Bot. p.* 272.

Clinopodium incanum. *Willd. Sp.* 3. *p.* 132. *Muhl. Catal. p.* 56.

Hoary Pycnanthemum. *Vulgò*—Mountain Mint. Welsh Mint.

Root perennial. *Stem* 2 to 4 feet high, mostly several from the root, erect, or oblique, branching above, obtusely 4-angled, very pubescent, especially at summit. *Leaves* an inch and half to near 3 inches long, and half an inch to an inch or more in width, sparingly serrate, somewhat punctate; the upper ones clothed on both sides with a short hoary tomentum; those below hoary-tomentose beneath, with an additional soft pilose pubescence; *petioles* 1 fourth to half an inch long, villose. *Flowers* in compound heads, or compact cymes, the subdivisions on short peduncles. *Bracts* longer than the calyx, setaceous, or subulate-linear, bearded at the points, the outer or lower ones lanceolate. *Calyx* punctate; teeth acuminate. *Corolla* whitish, or pale red, with purple spots, pubescent. *Stamens* exserted. *Akenes* oblong, subtriquetrous, brown, hispid at apex.

Hab. Hilly woodlands; Mica-slate hills: frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This, and all the following species, have a pleasant aromatic odor.

2. P. muticum, *Pers.* Stem pubescent, paniculate at summit; leaves sessile, ovate-lanceolate, acute, subserrate, rounded at base, the upper ones canescent; verticils dense, mostly in terminal heads; bracts ovate-lanceolate, acuminate. *Beck, Bot. p.* 273.

Brachystemum muticum. *Mx. Am.* 2. *p.* 6. Icon, *tab.* 32. *Muhl. Catal. p.* 56.

Mutic, or awnless Pycnanthemum.

Root perennial. *Stem* 2 to 3 feet high, erect, pubescent, paniculately branched at summit. *Leaves* 1 to 3 inches long, and half an inch to an inch wide, mostly denticulate, sometimes very entire, sessile or subsessile, somewhat pubescent and ciliate, resinous-punctate,—the upper leaves, bracts, and branches, hoary-pubescent. *Flowers* in dense terminal heads, sometimes with a compact verticil in the first axil below; *bracts* lanceolate, acuminate, hoary-pubescent and ciliate;

Calyx sprinkled with yellow resinous dots; teeth short, acute, ciliate-hirsute. *Corolla* pubescent, reddish white, with purple dots. *Stamens* included. *Style* equally bifid at apex, finally exserted. *Akenes* oblong, smooth.

Hab. Hilly woodlands; along Brandywine: frequent. *Fl.* July—Aug. *Fr.* Sept.

3. P. LANCEOLATUM, *Pursh.* Stem pubescent on the angles, corymbosely branched; leaves sessile, ovate-lanceolate, and lance-linear, acute, entire, scabrous or ciliate on the margin, the nerves branching from the midrib; verticils dense, numerous, subfastigiate, terminal and subterminal; bracts linear-lanceolate, sharply acuminate. *Benth. Lab. p.* 330.

Var. a. *latifolium.* Leaves ovate-lanceolate. *Benth. l. c.*

P. verticillatum. *Pers. Syn.* 2. *p.* 128. *Nutt. Gen.* 2. *p.* 33. *Ell. Sk.* 2. *p.* 83. *Torr. Comp. p.* 235. *Beck, Bot. p.* 273. *Eat. Man. p.* 290. Not of *Pursh* (*fide Benth.*).

Brachystemum verticillatum. *Mx. Am.* 2. *p.* 6. ICON, *tab.* 31. *Muhl. Catal. p.* 56.

Var. b. *angustifolium.* Leaves lance-linear. *Benth. l. c.*

Nepeta virginica. *Willd. Sp.* 3. *p.* 56. (*fide Benth.*). *Muhl? Cat. p.* 55. *Also?* Thymus virginicus. *Willd. Sp.* 3. *p.* 145.

Brachystemum virginicum? *Mx. l. c. Bigel. Bost. p.* 237. Not of *Muhl.*

B. lanceolatum. *Muhl. Catal. p.* 56.

Pycnanthemum virginicum. *Pers. l. c. Ait. Kew.* 3. *p.* 377. *Nutt. l. c. Ell. Sk.* 2. *p.* 82.

P. lanceolatum. *Pursh, l. c. Bart. Phil.* 2. *p.* 35. *Torr. l. c. Florul. Cestr. p.* 68. *Lindl. Ency. p.* 506. *Beck, l. c.*

LANCEOLATE PYCNANTHEMUM.

Root perennial. *Stem* 2 to 3 feet high, erect, obtusely 4 angled, roughish-pubescent, especially on the angles, often purplish, branched; branches corymbose, often hoary-pubescent. *Leaves* 1 to 2 or 2 and a half inches long,—in *var. a.* 1 third to 3 fourths of an inch wide,—in *var. b.* 1 eight to 1 fourth of an inch wide,—somewhat pubescent, often nearly smooth except on the margin and nerves, punctate, mostly very entire, upper ones somewhat canescent. *Heads* of flowers dense, numerous, fastigiate, terminal and subterminal, canescent; *bracts* lanceolate, and lance-linear, imbricated, sharply acuminate, and, with the calyx-teeth, hirsute-ciliate. *Corolla* pubescent, reddish white with dark purple dots. *Stamens* scarcely as long as the corolla. *Style* exserted, equally bifid at apex.

Hab. Borders of thickets; old fields, &c. frequent. *Fl.* August. *Fr.* September.

Obs. The *narrow-leaved variety* has much resemblance to the following species,—and seems to have been confounded with it, by the early Botanists. Mr. *Nuttall*, however, has taken the true distinction between them.

4. P. LINIFOLIUM, *Pursh.* Stem smooth; branches trichotomous and fastigiate; leaves crowded, linear, acute, very entire, smooth, longitudinally 3-nerved, sessile or subsessile; heads of flowers dense, terminal, hemispherical, corymbose. *Beck, Bot. p.* 273.

Brachystemon virginicus. *Muhl. Catal. p.* 56. Not? of *Mx.* & *Bigel.*

FLAX-LEAVED PYCNANTHEMUM.

Root perennial. *Stem* 1 to 2 feet high, erect, obscurely 4-angled, smooth, often purple, branched; branches erect, upper ones fastigiate, forming a close corymb. *Leaves* half an inch to 2 inches long, and 1 to 2 lines wide, sessile, rather crowded, and often in small axillary fascicles, smooth, minutely scabrous on the margin, punctate, with 3 or sometimes 5 nearly parallel nerves. *Flowers* in dense hemispherical heads; *bracts* imbricated, ovate-lanceolate, acuminate, ciliate-pubescent. *Corolla* pilose, white, or slightly tinged with red, with dark purple spots within. *Stamens* a little exserted.

Hab. Thickets, and exsiccated swamps: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This *may* be the *Thymus virginicus*, of *Linn.* but I think the brief descriptions of Authors, generally, apply better to the *narrow-leaved variety* of the preceding. Five or six additional species are enumerated in the U. States.

274. ORIGANUM. *L. Nutt. Gen.* 511.

[Gr. *Oros*, a mountain, & *Ganos*, joy; alluding to its fragrance and native locality.]

Flowers in dense clusters, imbricated with *bracts*. *Calyx* ovoid-tubular, striate, nearly equally 5-toothed. *Corolla* with the upper lip erect, nearly flat, emarginate; lower one spreading, 3-lobed, lobes subequal; tube about as long as the calyx.

1. O. VULGARE, *L.* Leaves ovate, hairy; spikes roundish, corymbose-paniculate, clustered, smoothish; bracts lance-ovate, longer than the calyx, colored. *Beck, Bot. p.* 274.

COMMON ORIGANUM. *Vulgò*—Wild marjoram.

Gall.—Origan ordinaire. *Germ.*—Gemeine Dosten. *Hisp.*—Orégano.

Root perennial, creeping. *Stem* 12 to 18 inches high, several from the same root, pubescent, often purplish, paniculately branching above. *Leaves* half an inch to about an inch long, and 1 third to 3 fourths of an inch wide, entire, hairy-pubescent, dark green above, paler beneath, on hairy *petioles* 1 fourth to near half an inch long,—with tufts of smaller leaves in the axils. *Flowers* in dense paniculate clusters; *bracts* lance-ovate, minutely pubescent, more or less tinged with dark purple. *Calyx* pubescent, with 5 equal erect lance-ovate segments, the orifice closed with white hairs. *Corolla* pale purple, pubescent.

Hab. Sandy banks; roadsides: rare. *Fl.* July—August. *Fr.* September.

Obs. I have met with a single bunch of this, in Patton's field, West Chester; but it is quite rare in Chester County. It grows plentifully by the side of the Philadelphia road, about 7 miles west of the City. *Willdenow* speaks of it as a native of Canada,—and Mr. *Nuttall* says it is indigenous; but it has every appearance of an introduced plant, in this region. It is the only species in the U. States.

275. MAJORANA. *Mœnch. Benth. Lab. p.* 338.

[A name derived from the Arabic.]

Flowers in dense 4-sided spikelets, imbricated with *bracts*. *Calyx* sub-bilabiate; upper lip flat, dilated and rounded at apex, entire, or 3-toothed, contracted and involute at base; lower lip very small. *Corolla* sub-bilabiate; upper lip rather erect, emarginate; lower lip spreading, 3-lobed, lobes nearly equal; tube about as long as the calyx. *Stamens* exserted, distant; *anthers* 2-celled; cells parallel, diverging, or finally divaricate.

1. M. HORTENSIS, Mœnch. *Leaves elliptic-obovate, obtuse, entire, petiolate, downy and canescent; spikelets oblong, compact, clustered at the ends of the branches; bracts orbicular-ovate.* Benth. Lab. p. 338.

Origanum Majorana. Linn. and others.

GARDEN MAJORANA. Vulgò—*Sweet Marjoram.*

Gall.—*La Marjolaine.* Germ.—*Der Majoran.* Hisp.—*Mejorana.*

Root *annual.* Stem 9 *to* 12 *or* 18 *inches high, subterete, pubescent, somewhat branched.* Leaves 1 *third of an inch to an inch long, and* 1 *fourth to* 3 *fourths of an inch wide, varying from ovate to elliptic and obovate, or spatulate, clothed with a short soft hoary pubescence.* Spikelets 1 *fourth to half an inch long, obtusely* 4*-cornered, hoary-pubescent, in sessile terminal clusters of threes, or on short axillary branches resembling peduncles;* bracts *very obtuse, or rounded, ciliate-pubescent, quadrifariously and densely imbricated, the margin at base involute.* Calyx *sprinkled with yellow resinous dots; upper lip (or sepal?) dilated, obtuse, ciliate-pilose and mostly* 3*-toothed at apex, narrowed below, with the margin folded in; lower lip (or sepal?) ovate, smooth, very minute, at the involute base of the upper one.* Corolla *white, minutely pubescent.* Style *equally bifid.*

Hab. *Gardens: frequent.* Fl. *July—August.* Fr. *September.*

Obs. *Cultivated for culinary purposes. There are no native species in the U. States.*

276. THYMUS. *L. Nutt. Gen.* 517.

[Greek, *Thymos*, courage; in allusion to its cordial qualities.]

Flowers capitate, or verticillate. *Calyx* tubular-campanulate, 10-ribbed, bilabiate; upper lip trifid, lower one bifid; throat hairy. *Corolla* with the upper lip erect, nearly flat, emarginate; lower one longer, spreading, 3-lobed, middle lobe broader.

1. T. SERPYLLUM, *L.* Stems decumbent, creeping; leaves elliptic-ovate, obtuse, flat; verticils crowded into terminal heads. *Beck, Bot. p.* 273.

Vulgò—Thyme. Wild Thyme. Creeping Thyme.

Root perennial, ligneous. *Stems* 4 to 6 or 8 inches long, numerous, slender, branching and entangled, procumbent, with the summits and branches ascending, suffruticose, purplish or brown, retrorsely pubescent on the angles. *Leaves* 1 fourth to near half an inch long, and 1 to 2 or 3 lines wide, entire and often slightly revolute on the margin, smoothish, punctate, petiolate, the base and petiole more or less ciliate with long hairs. *Flowers* crowded into terminal ovoid-oblong heads. *Calyx* pilose, the orifice closed with white hairs; *segments* acuminate, pectinately ciliate. *Corolla* purple, variegated with red and white spots.

Hab. Dry sandy banks; roadsides: not unfrequent. *Fl.* June—Sept. *Fr.* Aug—Oct.

Obs. This fragrant little foreigner is naturalized in many localities. Within my recollection, it was a prevalent vulgar notion that this plant sprang up, *spontaneously*, in spots where human blood had been spilled by any casualty, or violence! What cannot ignorance believe?

2. T. VULGARIS, L. *Stems erect; leaves oblong-ovate, or lance-ovate, revolute on the margin; verticils in terminal interrupted leafy spikes.* Benth. Lab. p. 342.

COMMON THYMUS. Vulgò.—*Garden Thyme. Standing Thyme.*

Gallicè—*Serpolet.* Germanicè—*Der Thymian.* Hisp.—*Tomillo.*

Root *perennial, ligneous.* Stems 4 *to* 6 *inches high, numerous, rather erect, much branched, and matted together at base, suffruticose, clothed with a short cinereous pubescence.* Leaves 1 *fourth to half an inch long, and* 1 *eighth to* 1 *fourth of an inch wide, revolute on the margin, punctate, slightly pubescent beneath, tapering to a petiole at base, which is somewhat ciliate with long hairs.* Flowers *in interrupted verticils, forming terminal leafy spikes.* Calyx *hirsute, strongly ribbed;* segments *of the lower lip peculiarly ciliate.* Corolla *pale purple.*

Hab. *Gardens: frequent.* Fl. *June—Aug.* Fr. *Aug—Sept.*

Obs. *Cultivated in kitchen gardens, as a pleasant condiment for many dishes. There are no native species in the U. States.*

277. SATUREJA. *L. Gen. Pl.* 961.

[A name supposed to be derived from the Arabic.]

Calyx tubular-campanulate, 10-nerved, deeply and nearly equally 5-toothed, or obscurely bilabiate; throat naked. *Corolla* bilabiate; upper lip erect, flat; lower lip spreading, 3-lobed, lobes nearly equal. *Stamens* rather erect, diverging, scarcely exserted.

1. S. HORTENSIS, L. *Stem erect, much branched; leaves oblong-linear, acute, entire; verticils axillary, pedunculate, few-flowered, subcymose, the upper ones somewhat spiked.* Benth. Lab. p. 352.
GARDEN SATUREJA. Vulgò—*Summer Savory.*
Gallicè—*La Sarriette.* Germ.—*Die Saturey.* Hispanicè—*Ajedréa.*

Root *annual.* Stem 6 *to* 12 *inches high, obscurely 4-angled, much branched, so as to appear bushy, firm and suffruticose at base, roughish-pubescent, mostly dark purple.* Leaves *half an inch to an inch long, and* 1 *to* 2 *or* 3 *lines wide, narrowed at base to a very short petiole, punctate, roughish with a short sparse pubescence.* Flowers *in small axillary opposite pedunculate clusters, about* 3 *in each cluster, the upper ones crowded into a leafy spike;* bracts *subulate-linear, hispid-ciliate.* Calyx-teeth *rather longer than the tube, erect, hispid-ciliate.* Corolla *pale violet-purple, somewhat pubescent, scarcely longer than the calyx-teeth.* Stamens *rather shorter than the corolla.* Akenes *ovoid, roughish-dotted, of a livid color.*

Hab. *Gardens: frequent.* Fl. *July—August.* Fr. *September.*

Obs. *This fragrant herb is much cultivated, for culinary purposes. There are no native species in the U. States.*

278. HYSSOPUS. *L. Nutt. Gen.* 498.

[Latinized from *Ezob;* an ancient Hebrew name.]

Calyx tubular, 15-nerved, equally 5-toothed; throat naked. *Corolla* bilabiate; upper lip erect, flat, emarginate; lower lip spreading, 3-lobed, middle lobe larger; tube as long as the calyx. *Stamens* exserted, diverging; *anthers* 2-celled; cells linear, divaricate.

1. H. OFFICINALIS, *L. Leaves linear-lanceolate, rather acute, very entire, sessile; verticils secund, racemose, upper ones approximate.* Benth. Lab. p. 357.
OFFICINAL HYSSOPUS. Vulgò—*Hyssop. Garden Hyssop.*
Gallicè—*Hysope.* Germanicè—*Der Isop.* Hispanicè—*Hisópo.*

Root *perennial.* Stem 18 *inches to* 2 *or* 3 *feet high, subterete, fruticose at base, minutely pubescent, brown, much branched; branches virgate, quadrangular, pubescent, green.* Leaves 3 *fourths of an inch to an inch and half long, and* 1 *eighth*

to 1 *third of an inch wide, narrowed at base, minutely pubescent.* Flowers *in subsessile clusters; clusters in rather crowded one-sided terminal racemes, or spikes, with a few distant ones below;* bracts *lance-linear, acute, the inner ones short.* Calyx-teeth *lanceolate, acuminate.* Corolla *bright blue, or sometimes purplish, pubescent externally.*

Hab. *Gardens: frequent.* Fl. *July—August.* Fr. *September.*

Obs. *Cultivated as a medicinal herb,—the infusion being a popular febrifuge. It is the only species of the genus, as it is now constituted.*

279. COLLINSONIA. *L. Nutt. Gen.* 26.

[In honor of *Peter Collinson*, of London; a Patron of Botanical Science.]

Calyx ovoid-campanulate, about 10-nerved, bilabiate; upper lip truncate, flattish, 3-toothed; lower lip bifid. *Corolla* exserted, campanulate, sub-bilabiate; upper lip 4-lobed, lobes nearly equal; lower lip longer, declined, toothed, or fimbriate; throat dilated. *Stamens* mostly 2, much exserted, diverging; *anthers* 2-celled; cells divaricate.

1. C. CANADENSIS, *L.* Leaves ovate, acuminate, coarsely serrate-dentate, thin and smoothish, petiolate; flowers diandrous, in loose terminal paniculate racemes. *Beck, Bot. p.* 275.
Also (*fide Benth.*), C. ovalis. *Pursh, Am.* 1. *p.* 21. *Ell. Sk.* 1. *p.* 35. *Lindl. Ency. p.* 26. *Eat. Man. p.* 102.

CANADIAN COLLINSONIA. *Vulgò*—Knot-root. Horse Balm.

Root perennial. *Stem* 2 to 3 feet high, somewhat branched, obtusely quadrangular, smooth, or sparingly pubescent, sometimes densely pubescent at summit. *Leaves* 4 to 8 or 9 inches long, and 3 to 5 inches wide, thin and membranaceous, nearly smooth, minutely resinous-punctate beneath, obtuse and rounded at base, or often cuneate, serratures mucronate; *petioles* 1 to 3 or 4 inches long,—the leaves at the base of the panicle smaller, and sessile. *Flowers* in loose paniculate racemes; branches and pedicels opposite, with minute lance-ovate acuminate *bracts* at base; *pedicels* 1 third to near half an inch long. *Calyx* smoothish; teeth of the lower lip lanceolate, longer than the upper ones. *Corolla* greenish yellow; lower lip elongated, fringed; tube exserted, dilated above, villose within. *Stamens* mostly 2, much longer than the corolla. *Style* rather shorter than the stamens, equally bifid and purple at apex. *Akene*, by abortion, mostly solitary (sometimes 2), globose, veined, smooth, of a livid color.

Hab. Rich, rocky woodlands: frequent. *Fl.* July—August. *Fr.* September.

Obs. This plant is mostly diandrous, by abortion, but I have occasionly observed a *third* slender stamen, in some of the flowers. The infusion of the *root* was formerly a popular febrifuge. The odor of the flowers greatly resembles that of *Hops*. Five additional species are enumerated in the U. States.

280. CUNILA. *L. Nutt. Gen.* 22.

[A name borrowed from the ancient Roman Naturalists.]

Calyx cylindric-tubular, 10-nerved, equally 5-toothed; throat densely villose. *Corolla* bilabiate; upper lip erect, flattish, emarginate; lower lip spreading, 3-lobed, lobes nearly equal, entire, or the middle one a little larger and emarginate. *Stamens* 2, erect, exserted, distant; *anthers* 2-celled; cells parallel, or finally diverging at base.

1. C. MARIANA, *L.* Leaves ovate, serrate, subsessile; cymes pedunculate, corymbose, terminal and axillary. *Beck, Bot. p.* 277.

MARYLAND CUNILA. *Vulgò*—Dittany.

Root perennial. *Stems* 8 to 12 inches long, erect, or oblique (mostly several from the root, forming bunches), quadrangular, smoothish, pubescent on the angles and joints, much branched, mostly purple. *Leaves* about an inch long, and 2 thirds of an inch wide, acuminately tapering to the apex, rounded and often subcordate at base, sessile, or on very short petioles, smoothish, sparingly pilose on the nerves and margin, pellucid-punctate. *Flowers* in small fastigiate corymbs, terminal and axillary; *pedicels* trichotomous, with subulate *bracts* at base. *Calyx* sprinkled with resinous dots; teeth lanceolate, acute; throat closed with a dense white villus. *Corolla* pale purple, pubescent, nearly twice as long as the calyx. *Stamens* 2, much exserted. *Style* as long as the stamens, equally bifid at apex, purple.

Hab. Dry, hilly woodlands; Mica-slate hills: frequent. *Fl.* July–Sept. *Fr.* Sept–Oct.

Obs. The infusion of this aromatic herb is a popular and pleasant beverage, in fevers. It is the only species in the U. States,—as the genus is now constituted by Mr. *Bentham.* In the beginning of winter, after a rain, very curious and fantastic *ribbands of ice* may often be observed, attached to the base of the stems of this plant,—produced, I presume, by the moisture from the earth rising in the dead stems by capillary attraction, and then being gradually forced out horizontally, through a slit, by the process of freezing. The same phenomenon has been noticed in other plants. *See Obs. on Helianthemum, p.* 314.

5. MELISSA TRIBE. *Calyx* 13 or rarely 10-nerved, bilabiate; upper lip 3-toothed, lower one bifid. *Corolla* bilabiate; upper lip straight, entire, or bifidly emarginate, mostly flattish; lower lip spreading, 3-lobed, lobes flat, the middle one often broader. *Stamens* 4, or sometimes 2, ascending. MELISSINEÆ. *Benth.*

281. HEDEOMA. *Pers. Nutt. Gen.* 23.

[Greek, *Hedeia osmè*, a pleasant odor; from its fragrance.]

Calyx ovoid-tubular, gibbous on the under side near the base, 13-nerved, bilabiate; upper lip 3-toothed, lower bifid; throat hairy. *Corolla* bilabiate; upper lip erect, flat; lower lip spreading, 3-lobed, lobes nearly equal. *Stamens* 2 fertile, ascending, about as long as the corolla; *anthers* 2-celled; cells diverging.

1. H. PULEGIOIDES, *Pers.* Leaves lance-ovate, subserrate, narrowed at base, petiolate; verticils axillary, about 6-flowered. *Beck, Bot. p.* 280. Cunila pulegioides. *Willd. Sp.* 1. *p.* 122. *Mx. Am.* 1. *p.* 13. *Ait. Kew.* 1. *p.* 48. *Muhl. Catal. p.* 3. *Bigel. Bost. p.* 10.

PULEGIUM-LIKE HEDEOMA. *Vulgò*—Penny-royal.

Root annual. *Stem* 6 to 12 inches high, hoary-pubescent, branched above. *Leaves* half an inch to an inch long, and 1 fourth to half an inch wide, lance-ovate, or lance-oblong, rather obtuse, sparingly serrate, sometimes entire, slightly pubescent, punctate, narrowed at base to a pubescent *petiole* 1 eighth to half an inch in length. *Flowers* on short pubescent pedicels, about 3 in each opposite axil; *bracts* linear, or lanceolate, scarcely as long as the pedicels. *Calyx* hirsute, the tube dilated or gibbous on the lower side; upper lip (lower, *Ell.*) with 3 ovate-lanceolate teeth; lower lip (upper, *Ell.*) with 2 subulate hispid-ciliate teeth. *Corolla* pale blue, about as long as the calyx. *Stamens* 2, scarcely exserted; the upper pair abortive, or mere rudiments. *Akenes* oval, subcompressed, smoothish, dirty white, or light brown.

Hab. Dry, slaty soils; old fields, &c. frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This is warmly aromatic; and the infusion is a deservedly popular diaphoretic, carminative, &c. It is the only species of the genus, as now constituted, known in the U. States.

282. MELISSA. *L. Nutt. Gen.* 513.

[Greek, *Melissa*, a bee; the flowers being much sought by that insect.]

Calyx tubular, 13-nerved, bilabiate; upper lip mostly spreading, 3-toothed, lower bifid. *Corolla* bilabiate; upper lip erect, flattish; lower lip spreading, 3-lobed, middle lobe mostly broader. *Stamens* ascending, mostly approximated in pairs at apex; *anthers* 2-celled; cells distinct, parallel, finally diverging; *connectivum* often thickened.

1. M. CLINOPODIUM, *Benth.* Villose and canescent; leaves oblong-ovate, rather obtuse, obscurely repand-denticulate; verticils full, many-flowered, depressed-globose; bracts numerous, subulate, as long as the calyx. *Benth. Lab. p.* 392.
Clinopodium vulgare. *L. and the Authors quoted in this work.*
Vulgò—Wild Basil. Field Thyme. [silvestre.
Gall. Grand Basilic sauvage. *Germ.* Der Wirbeldosten. *Hisp.* Albahaca

Root perennial. *Stem* 12 to 18 inches high, mostly several from the same root, erect or ascending, simple, or sparingly branched, hoary-villose. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, tapering to the apex, but rather obtuse, often nearly entire, green and smoothish above, canescent and hairy (especially on the nerves) beneath; *petioles* 1 fourth to half an inch long, villose. *Verticils* few, very hairy, mostly terminal, in round depressed heads about an inch in diameter; flowers on short pedicels; *bracts* subulate, ciliate with long hairs. *Calyx* hairy; the teeth subulate, and ciliate like the bracts. *Corolla* pale purple, or rose-colored, pubescent, the tube longer than the calyx. *Akenes* roundish-oval, smooth, brown.

Hab. Dry, sandy banks; roadsides: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. Mr. *Bentham* has reduced this to *Melissa*; but it differs much, in habit, from the following. Although extensively naturalized, it is evidently an introduced plant.

2. M. OFFICINALIS, *L.* Leaves oblong-ovate, rather acute, coarsely crenate-serrate, rugose, obtuse at base; verticils dimidiate, or secund, loose, axillary; bracts few, lance-ovate, petiolate. *Beck, Bot. p.* 280.
OFFICINAL MELISSA. *Vulgò*—Balm. Common Balm.
Gallicè—La Melisse. *Germanicè*—Die Melisse. *Hispanicè*—Melisa.

Root perennial. *Stem* 1 to 2 or 3 feet high, erect, branching, more or less pubescent. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 or 3 inches wide, the larger ones mostly obtuse and often truncate at base, more or less hairy, rugose. *Flowers* in small axillary pedunculate cymes; *pedicels* longer than the common peduncle, but shorter than the calyx; *bracts* few, leaf-like, pilose-ciliate, shorter than the calyx. *Calyx* dry, hairy; upper lip truncate, with 3 short acute teeth; teeth of the lower lip longer, lanceolate, acuminate, ciliate; throat gaping, pilose. *Corolla* white, or ochroleucous, exserted.

Hab. Open woodlands; along roads: not common. *Fl.* July—Aug. *Fr.* Sept.

Obs. This has strayed from the gardens, and become naturalized in some neighborhoods. It is much cultivated as a medicinal herb,—the infusion being a popular and pleasant drink in fevers. Three or four additional species, as the genus now stands, are found in the U. States,—one or two of which are believed to be indigenous in the Southern States.

6. SCUTELLARIA TRIBE. *Calyx* bilabiate; upper lip truncate, entire, or somewhat 3-toothed. *Corolla* bilabiate; upper lip vaulted; tube ascending, exserted, annulate within, or naked. *Stamens* ascending, under the upper lip of the corolla. SCUTELLARINEÆ. *Benth.*

283. PRUNELLA. *L. Nutt. Gen.* 515.

[German, *Brunelle*,—from *Die Braeune*, the quinsy; said to be cured by it.]

Calyx tubular-campanulate, about 10-nerved, reticulately veined, bilabiate; upper lip flat, dilated, truncate, with three short teeth; lower lip bifid, segments lanceolate. *Corolla* ringent; upper lip erect, vaulted, entire; lower lip depending, 3-lobed. *Stamens* ascending; *filaments* bidentate at apex, the lower tooth bearing the anther; *anthers* approximated in pairs under the upper lip of the corolla, 2-celled; cells distinct, divaricate.

1. P. VULGARIS, *L.* Leaves ovate-oblong, or ovate-lanceolate, crenate-dentate, or obsoletely serrate, petiolate. *Beck, Bot. p.* 281. *Also*, P. ovata, et var. *Pers. Syn.* 2. *p.* 137. Also, *Lindl. Ency. p.* 512. P. pennsylvanica. *Muhl. Catal. p.* 57. *Bart. Phil.* 2. *p.* 37. *Bart. Am.* 2. *p.* 69. ICON, *tab.* 60. Also, *Ait. Kew.* 3. *p.* 430. *Pursh, Am.* 2. *p.* 411. *Lindl. l. c.*

COMMON PRUNELLA. *Vulgò*—Heal-all. Self-heal.

Gall.–Brunelle ordinaire. *Germ.*–Gemeine Brunelle. *Hisp.*–Brunéla.

Root perennial. *Stem* 8 to 12 or 15 inches high, erect, or ascending, somewhat branching, especially at the base, hairy at summit and on the angles, smoothish below, mostly purplish brown. *Leaves* 1 to 3 inches long, and half an inch to an inch and half wide, variously toothed, or serrate, sometimes nearly entire, rarely laciniate, somewhat hairy and ciliate; *petioles* half an inch to 2 inches long (those of the radical or lower leaves often 3 or 4 inches long), hairy. *Flowers* in terminal oblong compact imbricated *spikes* 1 to 3 inches in length; *bracts* orbicular-cordate, or subreniform, with a short abrupt acumination, hairy and ciliate, sessile, the lower ones conspicuously acuminate. *Calyx* subsessile, hairy at base, lips purple. *Corolla* violet-purple (rarely pale purple, or nearly white), smoothish. *Akenes* obovate, striate-nerved, brown.

Hab. Woodlands; roadsides, &c. common. *Fl.* July—Sept. *Fr.* Aug—Nov.

Obs. This plant is very common, here; but Mr. *Nuttall* thinks it is certainly introduced. Its reputation, as a medicinal plant, is quite obsolete. Although presenting some *varieties*, there is probably but the one species in the U. States.

284. SCUTELLARIA. *L. Nutt. Gen.* 516.

[Latin, *Scutella*, a dish; from the form of the appendage to the calyx.]

Calyx campanulate, bilabiate, finally dividing to the base; lips entire, the upper one with a galeate appendage on the back, deciduous. *Corolla* bilabiate; upper lip vaulted, lower one dilated, convex; tube much exserted, ascending from near the base. *Stamens* ascending under the upper lip of the corolla; *anthers* approximated in pairs, subcordate, villose-ciliate. *Style* unequally bidentate at apex. *Akenes* tuberculate.

1. S. PILOSA, *Mx.* Stem erect, mostly simple, hairy-pubescent; leaves rhombic-ovate, or oval, crenate-serrate, petiolate, in distant pairs; raceme terminal, rather short; bracts elliptic-ovate. *Beck, Bot. p.* 282.

S. ovalifolia. *Bart. Phil.* 2. *p.* 39. *Torr. Comp. p.* 237. Also ? *Pers. Syn.* 2. *p.* 136. *Muhl. Catal. p.* 56. *Eat. Man. p.* 333.

HAIRY SCUTELLARIA. *Vulgò*—Scull-cap.

Root perennial. *Stem* 12 to 18 inches high, more or less hairy, often purplish. *Leaves* 3 to 5 distant pairs, 1 to 2 and a half inches long, and 3 fourths of an inch to an inch and half wide, rhombic-ovate, cuneately tapering to a petiole at base, more or less pubescent, punctate beneath, the lower ones obtuse, those above rather acute. *Raceme* terminal, generally simple and few-flowered; *pedicels* hirsute; *bracts* elliptic, entire, tapering to a petiole at base, hirsute and ciliate, punctate beneath. *Calyx* hirsute. *Corolla* purplish blue at summit, with the tube nearly white, pubescent externally, half an inch to 3 quarters in length.

Hab. Open woodlands; borders of thickets: common. *Fl.* June-Aug. *Fr.* Aug-Sept.

Obs. This species affords some striking *varieties*. I have specimens from the Susquehanna, with broad elliptic leaves, nearly twice the size of ours, smooth and membranaceous, and on longer petioles.

2. S. INTEGRIFOLIA, *L.* Stem erect, nearly simple, pubescent; leaves oblong-lanceolate, or sublinear, entire, rather obtuse, on short petioles; racemes terminal, subpaniculate, loose, leafy; bracts lanceolate; flowers large. *Beck, Bot. p.* 282.

S. hyssopifolia. *Pers. Syn.* 2. *p.* 136. *Bart. Am.* 1. *p.* 5, ICON, *tab.* 2. Also, *Willd. Sp.* 3. *p.* 174. *Muhl. Catal. p.* 56. *Torr. Comp. p.* 237. *Beck, l. c.*

Also, S. caroliniana. *Pursh, Am.* 2. *p.* 412. *Ell. Sk.* 2. *p.* 89. *Nutt. Gen. p.* 37. *Eat. Man. p.* 333.

ENTIRE-LEAVED SCUTELLARIA. *Vulgò*—Large-flowered Scull-cap.

Root perennial. *Stem* 1 to 2 feet high, rather slender, clothed with a short fine pubescence, greyish green, sparingly branched above, the axils below often with short slender abortive branches bearing a tuft of small leaves. *Leaves* 1 to 2 inches long, and 1 fourth to 2 thirds of an inch wide, minutely pubescent, pale green or cinereous, tapering at base to a short petiole. *Racemes* terminal and subterminal, loose; *branches and pedicels* densely hoary-pubescent; *bracts* oblong-lanceolate, subsessile, pubescent. *Calyx* pubescent, the galeate appendage becoming large. *Corolla* bright blue at summit, with the tube paler (or nearly white), pubescent externally, 3 fourths of an inch to an inch long, the limb and throat much dilated. *Akenes* subglobose, tuberculate, dark brown.

Hab. Moist thickets, and meadows: frequent. *Fl.* June—July. *Fr.* Aug—Sept.

Obs. This species is readily known by its handsome large flowers, and narrow oblong entire leaves. It is intensely bitter; and, no doubt, might be usefully employed as a tonic.

3. S. PARVULA, *Mx.* Stem decumbent, or oblique, slender, branching from the base, minutely pubescent; leaves ovate, or lance-ovate, mostly entire, subcordate at base, sessile or subsessile; flowers small, axillary, solitary, opposite. *Benth. Lab. p.* 440.

S. ambigua. *Beck, Bot. p.* 282. Also, *Nutt. Gen.* 2. *p.* 37. var. Missouriensis. *Eat. Man. p.* 333.

LITTLE SCUTELLARIA.

Root (*rhizoma?*) perennial, creeping, horizontal, jointed, with tuberous internodes, rendering it moniliform, and verticils of fibres from the joints. *Stem* 4 to 8 or 10 inches long, sometimes simple, generally more or less branched, especially from the base, spreading, or decumbent, slender (when old rather rigid), minutely scabrous on the angles, mostly purple. *Leaves* 1 third to 2 thirds of an inch long, and 1 eighth to 1 third of an inch wide, prominently nerved, scabrous with short hairs on the upper surface and nerves, margin entire and revolute, under surface often dark purple; lower leaves roundish-cordate, on short petioles, upper ones oblong-ovate, sessile. *Flowers* small, on pubescent pedicels as long as the calyx. *Calyx* hairy, mostly purple; galeate appendage prominent. *Corolla* violet-purple, hairy externally, 1 third to near half an inch long. *Akenes* rugose-tuberculate, on a common pedicel.

Hab. Serpentine ridge, W. Chester; Schuylkill: rare. *Fl.* May-June. *Fr.* July-Aug.

Obs. Collected by D. Townsend, Esq. in 1829. This plant has much resemblance to my English specimens of *S. minor:* But I have received Kentucky specimens from Prof. Short, which are much stouter, with remotely dentate leaves, and appear to be intermediate between this and the following species.

4. S. nervósa, *Pursh.* Stem erect, mostly simple, slender and weak, smoothish; lower leaves roundish-cordate, petiolate, middle ones broad-ovate, crenate-dentate, sessile, upper or floral ones ovate-lanceolate, entire; flowers axillary, solitary, opposite. *Benth. Lab. p.* 441.
S. parviflora? *Muhl. Catal. p.* 56.
S. gracilis. *Nutt. Gen.* 2. *p.* 37. *Bart. Phil.* 2. *p.* 38. *Torr. Comp. p.* 237. *Beck, Bot. p.* 281. *Eat. Man. p.* 332.

Nerved Scutellaria.

Plant mostly pale green. *Root* perennial, fibrous,—often with slender horizontal rhizoma-like runners, or branches, from the neck. *Stem* 9 to 15 inches high, mostly erect, but often curved and decumbent at base, rarely branched; angles acute and somewhat winged. *Leaves* half an inch to an inch and half long, and 1 third of an inch to an inch wide, in rather distant pairs, prominently nerved, thin and smoothish, sometimes hairy, particularly on the upper surface, and ciliate on the margin; lower ones small, roundish-cordate, petiolate, purple beneath; middle ones largest, cordate-ovate, rather obtuse, coarsely and sparingly crenate-dentate, sessile; upper ones gradually smaller, more lanceolate, entire, subsessile. *Pedicels* solitary, opposite, in the axils of the diminishing upper leaves, pubescent, longer than the calyx. *Calyx* smoothish, the nerves and margins somewhat ciliate, the galeate appendage becoming much enlarged, broad and roundish-obovate. *Corolla* pale blue, minutely pubescent externally, 1 third to half an inch long. *Akenes* rugose-tuberculate, supported on a conspicuous common pedicel.

Hab. Banks of the Schuylkill; Black Rock: rare. *Fl.* May-June. *Fr.* July-Aug.

Obs. Collected in the above locality by Mr. John Marshall, in 1829. It has not yet been found elsewhere, within the County.

5. S. lateriflora, *L.* Stem rather erect, much branched, smoothish; leaves ovate-lanceolate, acuminate, coarsely serrate, rounded at base, petiolate; racemes axillary, leafy. *Beck, Bot. p.* 282.

Lateral-Flowered Scutellaria. *Vulgò*—Mad-dog Scull-cap.

Root perennial. *Stem* 1 to 2 feet high, much branched, smooth, angles slightly scabrous, sides concave. *Leaves* 1 to 3 inches long, and half an inch to an inch and half wide, diminishing as they ascend, smooth and thin, on *petioles* half an inch to an inch in length. *Flowers* in leafy racemes terminating the slender axil-

lary branches; *pedicels* solitary, opposite, in the axils of the small leaves, with minute filiform pubescent *bracts* at base. *Calyx* minutely pubescent. *Corolla* palish violet-purple (rarely milk white), minutely pubescent externally, 1 fourth to 1 third of an inch long. *Akenes* tuberculate.

Hab. Low swampy grounds; ditch banks, &c. frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. Some years since, this plant had much notoriety in consequence of the assertions of Empirics, and Newspaper Editors, that it was a sovereign remedy for *Hydrophobia*. Like its numerous predecessors, of the same pretensions, it had its day of importance among the credulous, and then sank into the oblivion which necessarily awaits all *such specifics*. Four or five additional species are enumerated in the U. States.

8. NEPETA TRIBE. *Calyx* oblique, or sub-bilabiate, the upper segments larger. *Corolla* bilabiate; upper lip somewhat vaulted, lower one spreading, throat mostly inflated. *Stamens* ascending or diverging, the upper pair longer. NEPETEÆ *Benth.*

285. LOPHANTHUS. *Benth. Lab. p.* 462.

[Greek, *Lophos*, a crest, and *Anthos*, a flower; in allusion to the flowers.]

Calyx tubular, 15-nerved; limb oblique, 5-cleft, upper segments rather longer. *Corolla* bilabiate; upper lip somewhat erect, bifidly emarginate; lower lip 3-lobed, middle lobe broader, crenate. *Stamens* diverging, upper pair longer; *anthers* 2-celled; cells parallel, or finally somewhat diverging.

1. L. SCROPHULARIÆFOLIUS, *Benth.* Stem pubescent, with the angles obtuse; leaves cordate-ovate, crenate-serrate; petioles ciliate-pubescent. *Benth. Lab. p.* 463.

Hyssopus scrophulariifolius. *Willd. and the other authors here quoted.*

SCROPHULARIA-LEAVED LOPHANTHUS.

Root perennial (biennial, *Willd.*). *Stem* 3 to 5 feet high, stout (often half an inch in diameter), branched, mostly dark purple, pubescent, the sides concave, the angles obtuse, or rounded. *Leaves* 3 to 6 inches long, and an inch and half to 3 or 4 inches wide, ovate, acuminate, coarsely and rather obtusely serrate, obtuse and often cordate at base, more or less pubescent with short hairs, sometimes nearly smooth, dark green or purplish; *petioles* 1 to 2 inches long, mostly conspicuously ciliate-pubescent. *Verticils* crowded in terminal cylindric purplish *spikes* 2 to 6 inches in length, interrupted at base; *bracts* ovate, acuminate, smoothish. *Calyx* smoothish; segments lanceolate, purplish. *Corolla* pale purple. *Stamens* and *style* exserted.

Hab. Fence-rows; thickets, &c. frequent. *Fl.* August. *Fr.* September—Octo.

2. L. NEPETOIDES, *Benth.* Stem smooth, with the angles acute and sub-alate; leaves ovate and lance-ovate, acutely serrate; petioles smoothish. *Benth. Lab. p.* 463.

Hyssopus nepetoides. *Willd. and the other authors here quoted.*

NEPETA-LIKE LOPHANTHUS.

Root perennial. *Stem* 4 to 6 feet high, branched, pale yellowish green, nearly or quite smooth, the sides concave or depressed, striate, the angles prominent, with a sharp sub-alate ridge. *Leaves* 2 to 4 or 5 inches long, and 1 to 2 or 3 inches wide, ovate and lance-ovate, acutely serrate, with a conspicuous entire acumination, mi-

nutely and softly pubescent beneath, pale green; *petioles* 1 to 2 inches long, smoothish, or minutely ciliate-pubescent. *Verticils* crowded in terminal cylindric yellowish green *spikes* 2 to 4 or 5 inches in length, somewhat interrupted at base; *bracts* lance-ovate, sharply and conspicuously acuminate, minutely pubescent and ciliate. *Calyx* smoothish; segments lance-oblong, pale green. *Corolla* pale greenish yellow. *Stamens* and *style* exserted (*style* often shorter than the corolla. *Benth.*).

Hab. Fence-rows; borders of woods, &c. frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This is often a taller plant than the preceding, but the stem is not usually quite so stout. They are readily distinguished, as far as they can be seen, by the *color* alone,—which I believe is very constant. I have no doubt they are specifically distinct; and have been very properly separated, by Mr. *Bentham*, from *Hyssopus*. Two other species are enumerated in the Western Territory of the U. States.

286. NEPETA. *L. Nutt. Gen.* 499.

[Supposed to be named from *Nepete*, a town in Italy.]

Calyx tubular, sometimes ovoid, about 15-nerved, arid; limb obliquely 5-toothed. *Corolla* bilabiate; upper lip erect, somewhat concave, emarginate, or bifid; lower lip 3-lobed, middle lobe largest; throat dilated, with the margin often reflexed; tube slender below. *Stamens* ascending; *anthers* mostly approximated in pairs, 2-celled; cells diverging, finally divaricate.

1. N. Cataria, *L.* Hoary-pubescent; stem erect, tall; leaves oblong-cordate, acute, coarsely crenate-serrate, rugose; verticils many-flowered, subglobose, upper ones crowded in a spike, lower ones distant; corolla one half longer than the calyx. *Beck, Bot. p.* 279.

Cat Nepeta. *Vulgò*—Cat-mint. Cat-nep.

Gall.—Herbe aux Chats. *Germ.*—Die Katzenmünze. *Hisp.*—Gatéra.

Root perennial. *Stem* 2 to 3 feet high, mostly several from the same root, erect, somewhat branched, clothed with a short soft hoary pubescence. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 inches wide, tapering to the apex, incised-crenate, softly pubescent, green above, canescent beneath; *petioles* half an inch to an inch and half long, pubescent, channelled on the upper side. *Verticils* on short peduncles, densely cymose, in interrupted terminal spikes, hoary-pubescent; *pedicels* with small lance-linear or subulate *bracts* at base. *Calyx* ovoid-tubular; teeth subulate-lanceolate, villose-ciliate, the upper ones rather larger. *Corolla* ochroleucous, with a reddish tinge and purple dots, pubescent; upper lip emarginate; tube a little exserted. *Akenes* oval, smooth, brown.

Hab. Fence-rows, and cultivated lots: common. *Fl.* June—Aug. *Fr.* July—Sept.

Obs. Extensively naturalized, so as to be rather a troublesome weed in gardens, and cultivated lots. The herb, in infusion, is a highly popular domestic medicine, among the good ladies who deal in simples,—and is probably often useful.

2. N. Glechoma, *Benth.* Stem procumbent, radicating at base; leaves cordate-reniform, rounded, crenate; verticils few-flowered, axillary; corolla nearly three times as long as the calyx. *Benth. Lab. p.* 485.

Glechoma hederacea. *Willd. and the other authors quoted in this work.*

Vulgò—Ground Ivy. Ale-hoof.

Gall.—Lierre terrestre. *Germ.*—Die Gundelrebe. *Hisp.*—Yedra terrestre.

Root perennial. *Stem* 6 to 18 inches long, slender, prostrate, radicating; flowering branches erect, or ascending, flaccid, 4 to 8 or 10 inches high, retrorsely pubescent with short subulate hairs. *Leaves* 3 fourths of an inch to an inch and half long, and 1 to 2 inches wide, coarsely crenate, pilose on the upper surface, and nerves beneath; *petioles* 1 to 3 inches long, retrorsely pilose. *Verticils* all distant, in the axils of the leaves, often halved, or a small cluster in one of the opposite axils; *pedicels* with very small subulate ciliate *bracts* at base. *Calyx* tubular, pilose; teeth lanceolate, ciliate, with an awn-like acumination. *Corolla* blue, or purplish blue (rarely white), hairy; upper lip bifid; tube slender, much exserted. *Anthers* approximated in pairs; cells diverging, presenting the figure of a cross.

Hab. Fence-rows, and shaded places: frequent. *Fl.* May—June. *Fr.* July.

Obs. Naturalized in many localities; but clearly, I think, not indigenous. It is said to have been used in brewing Ale, prior to the employment of Hops. The infusion is a popular medicine, like that of the preceding. I have followed Mr. *Bentham* in reducing this to a species of *Nepeta*; though, it must be confessed, its habit is very different from that of the common Cat-mint. Mr. B. avers, however, that the whole of this Tribe might be not inappropriately considered as a single genus. There are no native species in the U. States.

9. STACHYS TRIBE. *Calyx* irregularly veined, or 5 to 10-nerved, oblique, or rarely sub-bilabiate, 3 to 10-toothed. *Corolla* bilabiate; upper lip galeate, or flat, entire, or emarginate; lower lip variously 3-lobed. *Stamens* ascending, upper pair shorter. STACHYDEÆ. *Benth.*

287. LAMIUM. *L. Nutt. Gen.* 500.

[Greek, *Laimos*, the throat; from its gaping flowers.]

Calyx tubular-campanulate, about 5-nerved; limb mostly oblique; teeth 5, nearly equal, subulate at apex. *Corolla* ringent; upper lip ovate, or oblong, galeate, mostly narrowed at base; throat dilated; lateral lobes at the margin of the throat truncate, or oblong, sometimes with a tooth-like process; middle or lower lobe broad, emarginate, contracted at base, substipitate.

1. L. AMPLEXICAULE, *L.* Leaves rounded, crenately incised, lower ones petiolate, floral ones sessile, amplexicaul; tube of the corolla naked within, the lateral lobes not toothed. *Beck, Bot. p.* 278.

AMPLEXICAUL LAMIUM. *Vulgò*—Dead Nettle. Hen-bit. *Gall.*—Le Lamier. *Germ.*—Die Taube Nessel. *Hisp.*—Ortiga muerta.

Root annual. *Stems* several, or much branched from the base, decumbent, ascending, 6 to 12 inches high, smoothish, or minutely and retrorsely hairy, mostly purple. *Leaves* half an inch to 3 quarters in length, and mostly wider than long; *lower* or *cauline ones* on *petioles* half an inch to an inch long; *upper* or *floral ones* closely sessile, dilated, hairy. *Verticils* many-flowered, dense, sitting closely in the axils of the floral leaves, lower ones distant, upper ones rather approximated. *Calyx* sessile, hirsute. *Corolla* bright deep purple, pubescent, the galeate upper lip nearly entire, clothed with a purple villus; lower lip obcordate; throat dilated, laterally compressed; tube slender, much exserted. *Anthers* hairy. *Akenes* ob-ovoid-oblong, subtriquetrous, convex externally, purplish, roughish with paler colored dots.

Hab. Gardens, and cultivated lots: common. *Fl.* April—May. *Fr.* June.

Obs. Abundantly naturalized; and rather a troublesome weed in gardens. The *variety*, with the corolla of the lower verticils minute, or abortive, may often be observed in flower in February and March.

2. L. PURPUREUM, *L.* Leaves cordate, crenate-serrate, all petiolate, upper ones crowded; tube of the corolla with a hairy ring at base within, the lateral lobes produced into a tooth-like process. *Benth. Lab. p.* 512.

PURPLE LAMIUM.

Root annual. *Stem* 4 to 6 or 8 inches high, branched at base; branches ascending, retrorsely scabrous, dark green or purplish. *Leaves* half an inch to an inch long, rugose, hairy; *lower ones* orbicular-cordate, on petioles an inch to an inch and half long; *upper ones* oblong-cordate, crowded at the summit of the stem, on shorter petioles, silky-hirsute, especially on the upper surface. *Verticils* many-flowered, crowded at the summit of the stem, forming a sort of leafy head, sometimes the lowest one a little distant. *Calyx* somewhat hairy; teeth subulate, ciliate. *Corolla* violet-purple, pubescent; galeate upper lip entire, villose; lateral lobes toothed; lower lip bifidly emarginate, spotted. *Anthers* hairy.

Hab. Gardens, and cultivated Lots: not common. *Fl.* April—May. *Fr.* June.

Obs. I am indebted for this to Mr. PENNOCK PASSMORE,—who found it naturalized on his farm, in East Goshen. There are probably no native species in the U. States.

288. LEONURUS. *L. Nutt. Gen.* 504.

[Greek, *Leon*, a lion, and *Oura*, a tail; from a fancied resemblance of the plant.]

Calyx turbinate, 5 or 10-nerved, nearly equally 5-toothed; teeth subulate, subspinescent, finally spreading. *Corolla* bilabiate; upper lip oblong, entire, flattish, or somewhat vaulted; lower lip spreading, 3-lobed, lateral lobes oblong, middle one obcordate. *Stamens* ascending, lower ones longer; *anthers* approximated in pairs, incumbent, 2-celled; cells mostly parallel. *Akenes* triquetrous, truncate at apex.

1. L. CARDIACA, *L.* Stem-leaves palmate-lobed, floral ones cuneate-oblong, mostly trifid, lobes lanceolate; corolla longer than the calyx-teeth; tube with a villose ring within at base; upper lip flattish, hirsutely villose. *Beck, Bot. p.* 278.

CARDIAC LEONURUS. *Vulgò*—Mother-wort.

Gall.—L'Agripaume. *Germ.*—Das Herzgespann. *Hisp.*—Agripalma.

Root perennial. *Stem* 2 to 4 feet high, branched at base, and above, retrorsely pubescent, with a hairy ring at the joints, often purple at base. *Leaves* 2 to 4 inches long, and 1 to 3 or 4 inches wide, rugose, pubescent; the *lower* ones nearly orbicular in the outline, palmate-lobed, pubescent, lobes lanceolate, acute, coarsely and unequally serrate, *petioles* 1 to 2 inches long; *upper* or *floral* leaves obovate-oblong, or cuneate, acutely 3-lobed at apex, middle lobe longest, margin mostly entire, *petioles* half an inch to an inch long. *Verticils* 6 to 12 or 15-flowered, sessile, distant, forming an interrupted leafy spike 6 to 12 or 15 inches long; *bracts* subulate. *Calyx* obovoid or turbinate, strongly 5-ribbed, smoothish, becoming rigid; teeth lanceolate, sharply acuminate, pungent, spreading, the lower ones rather longer. *Corolla* pale purple, externally very hairy, especially on the upper lip. *Akenes* hirsute at apex, reddish brown.

Hab. Yards, fence-rows, and waste places: common. *Fl.* June—July. *Fr.* Aug.

Obs. This is rather a troublesome foreign weed,—now completely naturalized

2. L. MARRUBIASTRUM, *L.* Stem-leaves oblong-ovate, coarsely incised-serrate, floral ones lanceolate, tapering at each end, incised-dentate; corolla shorter than the calyx-teeth, tube naked within, upper lip somewhat vaulted, pubescent. *Benth. Lab. p.* 520.

MARRUBIUM-LIKE LEONURUS.

Root perennial. *Stem* 2 to 4 feet high, with ascending branches, clothed with a short retrorse cinereous pubescence. *Leaves* 2 to 3 inches long, and half an inch to near 2 inches wide, gradually smaller above, green and smoothish on the upper surface, cinereous and softly pubescent beneath; *radical leaves* ovate, crenate, on long petioles; *lower stem-leaves* deeply and coarsely serrate, serratures obtuse, mucronate, *petioles* 1 to 2 inches long; *upper* or *floral* leaves lanceolate, sparingly incised-dentate, the smaller ones often entire, on short slender petioles. *Verticils* many-flowered, subsessile, dense, distant, forming interrupted leafy spikes 6 to 18 inches long: *bracts* numerous, terete, needle-like, pubescent, nearly as long as the calyx. *Calyx* tubular-campanulate, 10-nerved, reticulately veined, pubescent, and sprinkled with minute resinous particles; teeth spreading, subulate, with sharp slender points. *Corolla* whitish, tinged with red, externally pubescent. *Akenes* dark brown, with a few hairs and numerous glittering dots on the truncate apex.

Hab. Roadsides; Marshallton; West Chester: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. This foreigner has probably escaped from the Botanic Garden of the late HUMPHREY MARSHALL, and bids fair to become extensively naturalized in the surrounding country. There are no native species in the U. States.

289. STACHYS. *L. Nutt. Gen.* 503.

[Greek, *Stachys*, a spike; in reference to its mode of flowering.]

Calyx tubular-campanulate, 5 or 10-nerved, 5-toothed; teeth lanceolate, equal, or the upper ones larger. *Corolla* bilabiate; upper lip erect, spreading, or somewhat vaulted, entire, or emarginate; lower lip often longer, spreading, 3-lobed, middle lobe largest, entire, or emarginate. *Stamens* ascending, lower ones longer; *anthers* approximated in pairs, 2-celled; cells distinct, parallel, diverging, or divaricate. *Akenes* obtuse, not truncate.

1. S. ASPERA? *Mx.* Stem retrorsely hispid, or often smoothish: leaves on short petioles, ovate-oblong, or oblong-lanceolate, acute, often rounded at base, serrate, smooth, or sparingly pilose; verticils about 6-flowered; calyx smooth, or hairy on the nerves. *Beck, Bot. p.* 279. Not? *Muhl.* S. tenuifolia? *Willd. Sp.* 3. *p.* 100. *Muhl. Catal. p.* 55. Also? *Ell. Sk.* 2. *p.* 75. *Eat. Man. p.* 355. Not of *Lindl.*
Also? S. hispida. *Pursh, Am.* 2. *p.* 407, *Ell. Sk.* 2. *p.* 74. *Eat. l. c.* Not? of *Nutt.*

ROUGH STACHYS. *Vulgò*—Hedge Nettle.

Root perennial. *Stem* 18 inches to 2 or 3 feet high, erect, rather slender, somewhat branched, retrorsely hispid on the angles, or often smoothish. *Leaves* 2 to 5 inches long, and half an inch to an inch or inch and half wide, generally smooth, thin and membranaceous; *petioles* 1 fourth to 3 fourths of an inch long, smooth, or sparingly hispid-ciliate. *Verticils* mostly 6-flowered, distant, in the axils of the upper diminishing leaves, forming interrupted leafy spikes, the upper floral leaves often ciliate at base; *bracts* subulate, minute, or lance-linear and ciliate. *Calyx* mostly smooth, sometimes pilose on the primary nerves; teeth lanceolate, spreading, becoming rigid and subspinescent. *Corolla* pale violet-purple, slightly pubescent;

tube with a hairy ring within towards the base. *Filaments* pubescent. *Akenes* roundish-oval, subtriquetrous, externally convex, roughish-dotted, greenish-brown.

Hab. Moist thickets; along rivulets, &c. frequent. *Fl.* August. *Fr.* September.

Obs. Our American species of Stachys afford *varieties* which seem to have their characters blended; and I fear there is some confusion in the nomenclature. The plant here intended has the leaves considerably resembling those of S. *palustris*, of Europe, in form,—but they are thin, smooth, and constantly petiolate, and the calyx is generally quite smooth. There is a variety of it, however, with the leaves more ovate-lanceolate, subcordate at base, and the stem more hispid. The varieties of this are probably all included, by *Bentham*, under the S. *aspera*.

2. S. SYLVATICA, *L.?* Stem very hispid; leaves on short petioles, cordate-ovate, or ovate-lanceolate, acuminate, crenate-serrate, hirsute; verticils 4 to 6-flowered; floral leaves hispid-ciliate; calyx hirsute, with ciliate teeth. *Beck, Bot. p.* 279.

S. aspera? *Muhl. Catal. p.* 55. *Bigel. Bost. p.* 236. Not? of *Pursh, Bart. Ell. Torr. Beck, & Eat.*

Also? S. hispida. *Nutt. Gen.* 2. *p.* 30. Not? of *Pursh, Ell. & Eat.*

WOOD STACHYS.

Root perennial. *Stem* 1 to 2 feet high, rather stout, branching, mostly very hispid on the angles. *Leaves* 2 to 4 inches long, and 1 to 2 and a half inches wide, varying from subcordate to ovate-lanceolate, obtusely serrate, hirsute on the upper surface, and hispid-pilose on the nerves beneath, somewhat rugose; *petioles* 1 eighth to half an inch long, hispid-ciliate. *Verticils* 4 to 6-flowered, in the axils of rather crowded hispid-ciliate floral leaves; flowers larger than in the preceding; *bracts* subulate, minute, hispid-ciliate. *Calyx* hirsute on the nerves; teeth lanceolate, ciliate, finally rigid. *Corolla* purple, spotted, hairy externally; tube with a hairy ring within. *Stamens* finally bent over the side of the corolla; *filaments* pubescent-ciliate.

Hab. Low shaded grounds; Brandywine: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This is probably the S. *sylvatica*, of *Nuttall;* but it seems to be different from the European plant of that name,—especially in its shorter petioles. The leaves, also, are often more oblong, or lanceolate. Some of my specimens approach the description of S. *mexicana, Benth. Lab. p.* 541. If ours should prove to be distinct from those described by *Bentham*, it might be established as S. *hispida*. Two or three additional species are enumerated in the U. States; but they require a careful revision.

290. MARRUBIUM. *L. Nutt. Gen.* 507.

[Etymology obscure; supposed to be from a town in Italy.]

Calyx tubular, 5 to 10-nerved, nearly equally 5 or 10-toothed; teeth erect, or finally spreading. *Corolla* bilabiate; upper lip erect, flattish, or concave, entire, or bifid; lower lip spreading, 3-lobed, middle lobe broader, mostly emarginate; tube included. *Stamens* included, lower ones longer; *anthers* 2-celled; cells divaricate. *Akenes* obtuse, not truncate.

1. M. VULGARE, *L.* Stems ascending, hoary-tomentose; leaves roundish-ovate, or oval, crenate-dentate, softly villose and canescent beneath; verticils many-flowered, woolly and canescent; calyx with 10 subulate uncinate teeth. *Beck, Bot. p.* 280.

COMMON MARRUBIUM. *Vulgò*—Hoar-hound.

Gallicè–Marrube blanc. *Germ.*–Der weisse Andorn. *Hisp.*–Marrubio.

Root perennial. *Stem* 9 to 18 inches high, cespitose or branching from the base, ascending, clothed with a white wool. *Leaves* about 2 inches long, and nearly as wide as long, unequally crenate-dentate, rugose, greenish above, abruptly narrowed at base to a flat nerved woolly *petiole* half an inch to an inch long. *Verticils* distant, axillary, sessile, dense; *bracts* linear, woolly, as long as the calyx, with a smooth subulate recurved apex. *Calyx* woolly, 10-nerved, with 10 smooth subulate recurved teeth, the alternate ones shorter. *Corolla* white, small, pubescent; the upper lip oblong, bifid.

Hab. Stony banks; about houses, &c. frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This foreigner is naturalized in many places; but does not seem to extend itself very fast. The *herb* is a deservedly popular tonic; and a syrup prepared from it makes an excellent pectoral medicine. There are no native species in the U. States.

11. AJUGA TRIBE. *Corolla* with the upper lip sometimes very short, sometimes split, with the segments depending, rarely erect and vaulted; lower lip elongated. *Stamens* ascending, generally much exserted. *Akenes* reticulately rugose. AJUGOIDEÆ. *Benth.*

291. TRICHOSTEMA. *L. Nutt. Gen.* 519.

[Greek, *Thrix*, *trichos*, a hair, and *Stema*, a stamen; from its hair-like stamens.]

Calyx depressed-campanulate, oblique, resupinate, unequally 5-cleft; the 3 upper teeth (becoming the *lower* ones by the twisting of the peduncle) elongated, connate; the lower teeth (finally *upper*) short. *Corolla* with the tube slender, mostly exserted; limb 5-cleft; lobes oblong, declined, the lower ones scarcely larger. *Stamens* much exserted, the lower ones longer; *filaments* often sub-monadelphous; *anthers* 2-celled, cells divaricate, or diverging. *Akenes* rugose-pitted.

1. T. DICHOTOMUM, *L.* Leaves lance-oblong, or rhomboid-lanceolate, rather obtuse, entire, petiolate; flowers solitary, opposite, resupinate; calyx very oblique. *Beck, Bot. p.* 275. ICON, *Bart. Am.* 3. *p.* 93. DICHOTOMOUS TRICHOSTEMA. *Vulgò*–Bastard Pennyroyal. Blue Curls.

Root annual. *Stem* 6 to 12 or 15 inches high, obtusely quadrangular, with numerous opposite branches, often bushy, or paniculate, clothed with a short cinereous roughish pubescence. *Leaves* 1 to near 2 inches long, and 1 third to 2 thirds of an inch wide, pubescent, tapering at base to a *petiole* 1 fourth to half an inch long. *Flowers* from the axils of bract-like leaves on the branches, on pubescent *peduncles* 1 fourth to near half an inch in length, the terminal ones di- or trichotomous; *bracts* lanceolate, shorter than the peduncles *Calyx* inflated-campanulate, ribbed and veined, roughish-pubescent, somewhat bilabiate, finally very oblique and unequal, resupinate, the upper lip becoming the lower, much longer, and with 3 lance-ovate acuminate teeth; the lower (or finally upper) teeth short, ovate, acute. *Corolla* bright blue (rarely purplish), slightly pubescent, somewhat ringent; the upper lip slender, falcate, lower one linear, oblong. *Stamens* exserted, the filaments very long, slender and hair-like, curved. *Akenes* somewhat obovoid, reticulately rugose-pitted, light brown.

Hab. Sandy grounds; old fields, &c. frequent. *Fl.* August. *Fr.* September.

Obs. This herb has a resinous odor, considerably resembling that of the ripe kernels of the *Juglans nigra*, or black walnut. The *calyx* is subject to a monstrosity (probably from the puncture of insects),—becoming elongated, and resembling a lance oblong capsule. One other species, with linear leaves, but nearly allied to this, occurs in the U. States.

292. TEUCRIUM. *L. Nutt. Gen.* 495.

[Named from *Teucer*, a Trojan Prince,—who, it is said, first used the plant.]

Calyx tubular-campanulate, near equally 5-toothed. *Corolla* with the tube short; the 4 upper lobes of the limb nearly equal, oblong and declined, or very short and rather erect; the lowest lobe largest, oblong, or rounded, mostly concave, *Stamens* exserted from the cleft between the upper lobes of the corolla; cells of the *anthers* confluent. *Akenes* rugose.

1. T. CANADENSE, *L.* Leaves ovate-lanceolate, serrate, hoary-pubescent beneath, petiolate; verticils crowded in a simple terminal spike; bracts linear-lanceolate; calyx campanulate, declined, upper teeth broader. *Beck, Bot. p.* 274.

Also, T. virginicum. *Willd. Sp.* 3. *p.* 22. *Pers. Syn.* 2. *p.* 111. *Ait. Kew.* 3. *p.* 368. *Muhl. Catal. p.* 55. *Nutt. Gen.* 2. *p.* 26. *Bart. Phil.* 2. *p.* 30. *Ell. Sk.* 2. *p.* 70. *Torr. Comp. p.* 232. *Lindl. Ency. p.* 496. *Beck, l. c.*

CANADIAN TEUCRIUM. *Vulgò*—Wood Sage. Germander.

Root perennial. *Stem* 1 to 2 or 3 feet high, simple, or sparingly branched, square, with the sides concave, striate-grooved, and the angles rounded, clothed with a retrorse cinereous pubescence, often rather villose. *Leaves* 3 to 5 inches long, and 1 to 2 inches wide, acute, or subacuminate, mostly obtuse or rounded at base, and often a little unequal, green and sparingly pilose above, subvillose and canescent beneath; *petioles* 1 fourth to 3 fourths of an inch long, retrorsely pubescent. *Verticils* 4 to 6-flowered, mostly crowded, sometimes a little distant, in a simple terminal sub-canescent or greenish-grey *spike* 2 to 5 or 6 inches in length (often an opposite pair from the first axils beneath); *flowers* on short *pedicels*, with narrow lanceolate acuminate *bracts* at base about as long as the calyx. *Calyx* campanulate, finally somewhat ventricose or gibbous, pubescent; the 2 lower teeth lanceolate, the 3 upper ones ovate, broader and rather shorter. *Corolla* pale purple, minutely pubescent; the limb declined, with a fissure on the upper side, the upper or lateral lobes erect, acute, the middle or lowest lobe oblong, or elliptic-obovate, concave. *Stamens* ascending, exserted from the base of the fissure in the corolla. *Style* longer than the stamens, curved, equally bifid at apex. *Akenes* triquetrous-obovoid, rounded externally, reticulately rugose, greyish brown.

Hab. Fence-rows, and low shaded grounds: frequent. *Fl.* July. *Fr.* Aug—Sept.

Obs. This is usually about 12 or 15 inches high; but is frequently found of a larger growth, in the rich low grounds along the Brandywine. I am satisfied, however, that the T. *virginicum*, of Authors, is identical with our plant,—and not even a constant variety. One other species has been found in the U. States, on the Rocky Mountains.

Order 2. Angiospermia.

A. *Flowers usually Diandrous, by abortion.*

293. CATALPA. *Juss. Nutt. Gen.* 16.

[A name said to have been derived from our Southern Indians.]

Calyx 2-parted. *Corolla* campanulate; limb unequally 5-lobed; tube ventricose. *Stamens* 2 fertile, and 2 to 3 abortive (rarely didynamous). *Capsule* long, cylindric, pod-like, 2-celled, 2-valved. *Seeds* flat, membranaceously margined, and tufted at the ends.

Trees: leaves simple, without stipules, opposite, or verticillate in threes; flowers in terminal panicles. *Nat. Ord.* 217. *Lindl.* BIGNONIACEÆ.

1. C. CORDIFOLIA, *Duham.* Leaves cordate, acuminate, entire, petiolate; flowers paniculate. *Beck, Bot. p.* 245.
C. syringæfolia. *Ait. Kew.* 1. *p.* 24. *Pursh, Am.* 1. *p.* 10. *Lindl. Ency. p.* 26.
Bignonia Catalpa. *Marsh. Arbust. p.* 21. *Willd. Sp.* 3. *p.* 289. *Mx. Am.* 2. *p.* 25. *Pers. Syn.* 2. *p.* 170. *Muhl. Catal. p.* 58. *Mx. f. Sylva,* 2. *p.* 63. Icon, *tab.* 64.

HEART-LEAVED CATALPA. *Vulgò*—Catawba. Bean tree.

Stem 15 to 20 or 25 feet high, with irregular spreading branches. *Leaves* 4 to 6 or 8 inches in length, and nearly as wide as long, opposite, or disposed in threes, cordate, with a slender acumination, smooth above, somewhat pubescent beneath, especially along the nerves and veins; *petioles* 2 to 6 inches long, terete, striate, smoothish. *Flowers* in terminal pyramidal panicles, with trichotomous branches. *Calyx-segments* obovate, mucronate. *Corolla* whitish, tinged with violet-purple, the throat spotted with purple and yellow; lobes unequal, crenate and waved. *Stamens* mostly 2 fertile, and 1 or 2 abortive (sometimes perfectly *didynamous*). *Capsule* 6 to 9 or 12 inches long, and about half an inch in diameter, resembling a long silique, pendulous, persistent. *Seeds* lance-oblong, about half an inch in length, apparently of 2 flat oval divaricate lobes which are confluent at base, with a membranous covering which is extended at the margin, and especially at the apex,—each apex terminating in a slender filamentous tuft, or fringe.

Hab. Foot of the N. Valley hill: not common. *Fl.* June—July. *Fr.* October.

Obs. This tree occurs in the above locality, and about several old settlements; but I should judge it to have been introduced here. It is the only species in the U. States.

294. GRATIOLA. *L. Nutt. Gen.* 14.

[Latin, *Gratia,* grace, or favor; from its supposed medical virtues.]

Calyx deeply 5-parted, mostly with 2 *braets* at base. *Corolla* tubular, irregular, sub-bilabiate; upper lip emarginate, or bifid; lower lip nearly equally 3-lobed. *Stamens* 2 fertile, and mostly 2 abortive ones. *Stigma* 2-lobed. *Capsule* ovoid, subcompressed, 2-celled, 2-valved; *dissepiment* contrary to the valves. *Seeds* numerous, minute.

Herbaceous: leaves opposite; peduncles axillary, solitary, 1-flowered. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. G. VIRGINICA, *L.* Stem assurgent, terete, somewhat pubescent; leaves lance-oblong, and obovate-lanceolate, rather obtuse, sparingly dentate-serrate, smooth, narrowed at base, sessile; sterile filaments none. *Beck, Bot. p.* 265. Not of *Ell.*

VIRGINIAN GRATIOLA. *Vulgò*—Hedge Hyssop.

Root perennial? coarsely fibrous. *Stem* 4 to 8 or 10 inches long, decumbent, or oblique, branching, especially at base, more or less pubescent above, often smooth below. *Leaves* 3 fourths of an inch to an inch and half long, and 1 third to 2 thirds of an inch wide, varying from lance-oblong to elliptic and obovate-lanceolate, or spatulate, mostly obtuse, dentate-serrate above the middle, often nearly entire, or obsoletely repand-denticulate, narrowed at base, smooth, nerved, sessile and amplexicaul, or subconnate. *Peduncles* half an inch to an inch long, slender,

mostly pubescent; *bracts*, at the base of the calyx, linear-lanceolate, about as long or finally longer than the calyx. *Calyx-segments* lance-linear, rather acute, 1 third to half the length of the corolla. *Corolla* pale yellow, with an ochroleucous limb, sometimes tinged with red; *tube* a little curved; *lobes* emarginate; throat hairy. *Stamens* 2, inserted on, and shorter than, the tube of the corolla. *Style* somewhat persistent, about as long as the capsule; *stigma* oblique. *Capsule* ovate, acute, somewhat compressed, grooved at the central suture on each flatted side, from which the dissepiment proceeds,—usually opening with 2 valves, but each valve finally separable into 2 others. *Seeds* numerous, oblong, striate, minutely scabrous, pale straw-color.

Hab. Wet, miry places; along rivulets, &c. frequent. *Fl.* June-July. *Fr.* July-Aug.

Obs. Our plant presents some varieties; but they are all, probably, referable to this species. I have some doubts of the root being perennial. The G. *virginica*, of *Elliott*, Mr. *Le Conte* says is distinct,—being the G. *viscosa*, of *Schweinitz*. Five or six additional species are enumerated in the U. States.

295. LINDERNIA. *L. Nutt. Gen.* 15.

[So named in honor of *F. B. von Lindern*; a German Botanist.]

Calyx deeply 5-parted, naked at base. *Corolla* tubular, bilabiate; upper lip short, reflected, emarginate; lower lip 3-lobed, unequal. *Filaments* 4, the 2 longer ones forked and sterile. *Stigma* bilamellate. *Capsule* ovoid-oblong, 2-celled, 2-valved; *dissepiment* parallel with the valves. *Seeds* numerous, minute.

Herbaceous: leaves opposite; peduncles axillary, solitary, 1-flowered. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. L. ATTENUATA, *Muhl.* Leaves ovate-oblong, and obovate, repand-denticulate, narrowed at base, sessile; peduncles erect, shorter than the leaves. *Beck, Bot. p.* 265.

L. pyxidaria, *var.* major. *Pursh, Am.* 2. *p.* 419.

L. dilatata. *Florul. Cestr. p.* 3. Not of *Muhl.*

ATTENUATED LINDERNIA. *Vulgò*—Pimpernel.

Root annual. *Stem* 4 to 6 or 8 inches high, erect, or decumbent and radicating at the lower joints, quadrangular, smooth, branching, sometimes much branched from the base. *Leaves* half an inch to an inch long, and 1 fourth to half an inch wide, smooth, the lower ones obovate, or spatulate, nearly entire, narrowed almost to a petiole at base, those above ovate-oblong, or lance-ovate, acute, or sometimes obtuse, denticulate, abruptly narrowed at base, subamplexicaul. *Peduncles* quadrangular, smooth, shorter than the leaves, the upper ones finally becoming almost as long. *Calyx-segments* lance-linear, nearly equal. *Corolla* pale bluish-purple, about twice as long as the calyx. *Stamens* 2 fertile; *anthers* with the cells diverging. *Sterile filaments* as long as the corolla, forked (sometimes wanting?). *Style* rather persistent. *Capsule* a little longer than the calyx, acute. *Seeds* oblong, ribbed, pale straw-color.

Hab. Low, swampy grounds: frequent. *Fl.* July—August. *Fr.* August—Sept.

Obs. This was erroneously inserted in my Catalogue as L. *dilatata*. Three or four additional species are enumerated in the U. States.

B. *Flowers constantly Didynamous.*

296. GERARDIA. *L. Nutt. Gen.* 534.

[In honor of *John Gerard*; an old English Botanist.]

Calyx 5-toothed, or 5-cleft. *Corolla* subcampanulate and ventricose,

unequally 5-lobed, lobes mostly rounded. *Anthers* more or less villose. *Capsule* globose, or ovoid, 2-celled, opening at the apex.

Herbaceous, or rarely suffruticose: leaves mostly opposite, entire, or pinnatifid; flowers axillary, solitary. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

* *Flowers purple.*

1. G. TENUIFOLIA, *L.* Leaves linear, smoothish; peduncles longer than the flowers; calyx-teeth short, acute. *Beck, Bot. p.* 268. Icon, *Bart. Am.* 3. *tab.* 82.

SLENDER-LEAVED GERARDIA.

Root annual. *Stem* 9 to 12 or 15 inches high, slender, somewhat 4-angled by the decurrence of the leaves, smoothish, much branched above, often forming a paniculate bushy top. *Leaves* 3 fourths of an inch to an inch and half long, linear and very narrow (the widest scarcely a line in width), acute at each end, entire, somewhat scabrous on the upper surface, slightly revolute on the margin, sessile. *Peduncles* half an inch to an inch long, very slender, often opposite. *Calyx* campanulate, smooth, with minute teeth. *Corolla* purple, pubescent; limb nearly equally 5-lobed. *Anthers* villose. *Style* a little longer than the longest stamens. *Capsule* subglobose.

Hab. Woodlands, and old fields: common. *Fl.* August—September. *Fr.* Octo

Obs. This appears to be nearly allied to G. *setacea, Pursh* (which is probably the G. *erecta*, of *Mr.*)—of which I have received specimens from my excellent friend and correspondent, the Rev. Mr. CURTIS, of N. Carolina.

2. G. PURPUREA, *L.* Leaves lance-linear, very scabrous; peduncles shorter than the flowers; calyx-teeth subulate. *Beck, Bot. p.* 267. Icon, *Bart. Am.* 3. *tab.* 97.

PURPLE GERARDIA.

Root annual (biennial, *Bart.*). *Stem* 1 to 2 feet high, somewhat 4-angled by the decurrence of the leaves, roughish on the angles, branched. *Leaves* 3 fourths of an inch to an inch and half long, lance-linear, narrow (the widest scarcely 2 lines wide), acute at each end, entire, very scabrous on the upper surface, revolute on the margin, sessile or subsessile. *Peduncles* 1 to 2 or 3 lines in length, somewhat clavate, angular, often opposite. *Calyx* smooth, with subulate teeth. *Corolla* deep purple, pubescent, larger than in the preceding, lobes villose-ciliate. *Capsule* subglobose.

Hab. Swamps, and moist low grounds: frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. This has much general resemblance to the preceding; but is readily distinguished by its stouter growth, rougher leaves, and short peduncles.

3. G. AURICULATA, *Mx.* Stem subsimple, roughly hirsute; leaves ovate-lanceolate, auriculate at base, very scabrous, sessile, margin entire; flowers sessile; calyx-segments ovate-lanceolate, hirsutely scabrous and ciliate. *Beck, Bot. p.* 268.
Also ? Erinus africanus. *Muhl. Catal. p.* 59. Not of *Willd. & Pers.*

AURICULATE GERARDIA.

Root annual, coarsely fibrous. *Stem* 9 to 15 or 18 inches high, erect, terete, roughly and retrorsely hirsute, often simple, but the stouter specimens generally branched. *Leaves* an inch to an inch and half long, and 1 third to 2 thirds of an inch wide, ovate-lanceolate, acute, entire on the margin, closely sessile, with an

oblong-lanceolate lobe on each side at base, very scabrous on both surfaces. *Flowers* sessile, often opposite. *Calyx* hirsutely scabrous, deeply 5-cleft; segments ovate-lanceolate, sub-acuminate. *Corolla* purple (rarely milk white), hairy-pubescent, lobes ciliate. *Stamens* slightly hairy; *anthers* obtuse at each end. *Stigma* clavate. *Capsule* ovoid, minutely roughish-punctate. *Seeds* oblong, mucronate at each end, minutely scabrous-punctate, coated with an arillus-like envelope, which is diaphanous, cellular, and reticulately rugose-pitted.

Hab. Fields, and low grounds; West Chester: very rare. *Fl.* Aug—Sept. *Fr.* Oct.

Obs. This plant, though frequent in the Western country, is extremely rare east of the Alleghany mountains; and it is remarkable for making a transient appearance at long intervals. A single specimen was found here in 1816,—and it was often but fruitlessly sought for, afterwards, until the year 1827; when it was detected in considerable quantity, by Mr. A. H. Derrick, among the stubble of a wheat field, near the brick-yards on the S. W. side of this Borough. A few plants were observed at the same place, the following year; but since then, not a vestige of it has been seen. Mr. *Schweinitz* informed me it appeared in a similar manner, near Nazareth, Penn. in 1823. I have not heard of its being found elsewhere, on this side of the Alleghanies.

* * *Flowers yellow.*

4. G. flava, *L.* Stem mostly simple, pubescent; leaves lanceolate, or oblong-lanceolate, pubescent, entire, or obscurely toothed, subsessile, the lower ones often notched, or sparingly pinnatifid-lobed, on longer petioles; flowers subsessile; calyx pubescent, segments lance-ovate.
Beck, Bot. p. 268. Not ? of *Muhl.*
G. villosa (heterophylla) ? *Muhl. Catal. p.* 58.

Yellow Gerardia.

Root perennial. *Stem* 2 to 3 feet high, subterete, clothed with a short cinereous pubescence. *Leaves* 1 or 2 to 5 or 6 inches long, and half an inch to near 2 inches wide, roughish-pubescent, the upper ones gradually smaller, lanceolate, subsessile, and nearly entire, the lower ones oblong-lanceolate, often somewhat pinnatifid-lobed, narrowed at base to a distinct petiole. *Flowers* subsessile, opposite, approximated in a terminal leafy *spike* 4 to 6 or 8 inches long. *Calyx* densely pubescent; segments lance-ovate. *Corolla* yellow, large (an inch to an inch and half long), smoothish, hairy within, with the lobes slightly pubescent-ciliate. *Stamens* very hairy; *anthers* with 2 subulate horns at base. *Capsule* ovoid, acuminate, pubescent, sulcate opposite the dissepiments. *Seeds* pitted with honey-comb-like cells, coated with a membranaceous envelope which is rugose-cellular, and produced into winged ridges.

Hab. Hilly woodlands: common. *Fl.* July—August. *Fr.* September.

5. G. glauca, *Eddy.* Stem branched, smooth, glaucous; leaves oblong-ovate, and lance-oblong, pinnatifid, smooth, petiolate, the upper or branch leaves lanceolate and often entire; flowers pedunculate; calyx smooth, segments lance-linear. *Beck, Bot. p.* 268.
G. flava (sive glauca) ? *Muhl. Catal. p.* 58. Not of *Willd. &c.*
G. quercifolia. *Pursh, Am.* 2. *p.* 423. Icon, *tab.* 19. *Nutt. Gen.* 2. *p.* 48. *Bart. Phil.* 2. *p.* 45. *Ell. Sk.* 2. *p.* 120. *Florul. Cestr. p.* 71. *Lindl. Ency. p.* 528.
Rhinanthus virginicus. *Willd. Sp.* 3. *p.* 191. *Pers. Syn.* 2. *p.* 151.

Glaucous Gerardia.

Root perennial. *Stem* 3 to 4 or 5 feet high, obtusely 4-angled, smooth, often purple, but bluish-glaucous withal, paniculately branching. *Leaves* 2 to 6 or 7 inches long, and half an inch to 3 or 4 inches wide, smooth, paler beneath, and conspicuously veined; the lower ones large, oblong-ovate, deeply pinnatifid, the segments acute, subdentate; those above, or on the branches, small, narrow, lanceolate, acute, entire or sparingly toothed, all narrowed at base to distinct slender *petioles*. *Peduncles* 1 fourth to near half an inch long, somewhat clavate. *Calyx* smooth; segments lance-linear, acute, as long as the tube. *Corolla* yellow, as large as the preceding, smoothish, hairy within. *Stamens* somewhat hairy; *anthers* with 2 subulate horns at base. *Capsule* roundish-ovoid, with a short acumination.

Hab. Rocky woodlands; along Brandywine: not very common. *Fl.* Aug. *Fr.* Oct.

6. G. PEDICULARIA, *L.* Stem much branched, pubescent; leaves lance-oblong, pinnatifid, or doubly incised-serrate, roughish-puberulent, subsessile; flowers pedunculate; calyx-segments foliaceous, incised-dentate. *Beck, Bot. p.* 268.

PEDICULARIS-LIKE GERARDIA.

Root perennial. *Stem* 2 to 4 feet high, subterete, paniculately branching, pubescent, pubescence near the summit glandular and viscid. *Leaves* 1 to 3 or 4 inches long, and half an inch to 2 inches wide, pinnatifid, segments crenately incised-serrate. *Peduncles* 1 fourth to 3 fourths of an inch long, somewhat clavate, glandular-villose. *Calyx* glandular-villose, viscid; segments leaf-like, crenately incised, longer than the tube. *Corolla* yellow, an inch to near an inch and half long, villose externally and within. *Stamens* villose; *anthers* with 2 subulate horns at base. *Style* longer than the stamens, hairy at base, a little clavate at summit. *Capsule* ovoid, somewhat acuminate and slightly compressed at apex.

Hab. Hilly woodlands; Mica-slate hills: frequent. *Fl.* August. *Fr.* October.

Obs. This species is abundant on our sterile Mica-slate hills; but not very common where the land is good. Eight or nine additional species are enumerated in the U. States.

297. MIMULUS. *L. Nutt. Gen.* 537.

[Greek, *Mimo*, a monkey; in allusion to its grinning flowers.]

Calyx tubular, prismatic, 5-toothed. *Corolla* personate; upper lip bifid, reflexed at the sides; lower lip trifid, with the palate prominent. *Stigma* thick, bifid. *Capsule* 2-celled, many-seeded. *Seeds* minute.

Herbaceous: stem prominently quadrangular; leaves opposite; peduncles axillary, solitary, 1-flowered. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. M. RINGENS, *L.* Leaves sessile, lanceolate, serrate; peduncles longer than the flower; calyx-segments lance-ovate, acuminate. *Beck, Bot. p.* 264.

GRINNING MIMULUS. *Vulgò*—Monkey-flower.

Plant glabrous. *Root* perennial. *Stem* 12 to 18 inches high, erect, square, somewhat branched. *Leaves* 2 to 4 or 5 inches long, and half an inch to an inch wide, acute, or acuminate, sharply serrate, tapering at base, closely sessile and semi-amplexicaul. *Peduncles* an inch to an inch and half long, opposite. *Calyx* 5-angled; tube about half an inch long; segments lance-ovate, acuminate. *Corolla* pale violet-purple; tube 1 fourth to 1 third longer than the calyx, pubescent within; lower lip larger than the upper. *Stamens* included. *Style* about as long a the stamens, persistent. *Capsule* lance-ovoid, acute, bisulcate.

Hab. Meadows, and moist low grounds: frequent. *Fl.* August. *Fr.* September.

2. M. ALATUS, *L.* Leaves petiolate, ovate-lanceolate, unequally dentate-serrate; peduncles shorter than the flower; calyx-segments rounded, mucronate. *Beck, Bot. p.* 264. Icon, *Bart. Am.* 3. *tab.* 94.

Winged Mimulus.

Plant glabrous. *Root* perennial. *Stem* 1 to 2 or 3 feet high, erect, square, slightly winged on the angles by the decurrence of the petioles, sparingly branched. *Leaves* 2 or 3 to 5 or 6 inches long, and 1 to 2 or 2 and a half inches wide, somewhat obtusely sinuate-serrate, or dentate, thin and membranaceous, tapering at base to a *petiole* half an inch to an inch in length. *Peduncles* 1 fourth to half an inch long. *Calyx* 5-angled; segments short, rounded, mucronate. *Corolla* pale violet-purple, rather smaller than in the preceding.

Hab. Low grounds; along rivulets: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This has much general resemblance to the preceding: but is usually a larger plant,—and is readily distinguished by its petiolate leaves, and short peduncles. Two other species have been found in the U. States, far west.

298. LINARIA. *Tournef. Juss. Gen. p.* 120.

[Latin, *Linum*, flax; from the resemblance of the leaves in many species.]

Calyx 5-parted. *Corolla* personate; upper lip bifid, reflexed; lower lip trifid, the throat closed by the prominent palate; tube inflated, with a spur at base. *Stigma* simple, obtuse. *Capsule* ovoid, or globose, 2-celled, opening with several valves at apex. *Seeds* margined.

Herbaceous: leaves mostly alternate, rarely opposite or verticillate; flowers axillary, solitary, often approximated in terminal leafy or bracteate racemes. *Nat. Ord.* 211. *Lindl.* Scrophularineæ.

1. L. VULGARIS, *Mœnch.* Stem erect, simple; leaves lance-linear, crowded; flowers imbricated, in a terminal raceme; calyx smooth, shorter than the spur of the corolla. *Ait. Kew.* 4. *p.* 17.
Antirrhinum Linaria. *L. Willd. Pursh, Nutt. Beck, &c.*

Common Linaria. *Vulgò*—Toad-flax. Ransted weed. Butter and eggs. *Gall.*—Muflier linaire. *Germ.*—Das Flachskraut. *Hisp.*—Linaria.

Plant smooth and somewhat glaucous. *Root* perennial, creeping, subligneous. *Stem* 1 to 2 feet high, terete, leafy, rarely branched, often growing in bunches. *Leaves* 1 to 2 inches long, and 1 to 2 lines wide, entire, sessile, numerous, and irregularly scattered on the stem. *Flowers* pedunculate, in a dense terminal bracteate raceme; *peduncles* shorter than the bracts. *Calyx-segments* lance-oblong, acute, the 2 lower ones a little separated. *Corolla* pale greenish yellow, smooth, the palate of the lower lip bright deep orange-color, villose in the throat; spur subulate, about half an inch long. *Anthers* approximated in pairs, 2-lobed, lobes diverging; lower *filaments* longer, villose at base. *Style* shorter than the longest stamens; *stigma* obliquely truncate. *Capsule* ovoid-oblong, thin, smooth. *Seeds* numerous, with a dilated orbicular margin, roughish-dotted in the centre.

Hab. Fence-rows; pastures, &c. common. *Fl.* June—Sept. *Fr.* August—Octo.

Obs. This foreigner is extensively naturalized,—and though rather showy, is an obnoxious weed in our pastures. The remarkable *variety*, called *Peloria*,—with a regular 5-cleft ventricose corolla, 5 spurs, and 5 stamens,—was found near this Borough, in 1827, by H. H. Van Amringe, Esq. but it is very rare. There are two or three other species said to be naturalized in some parts of the U. States; and also one or two indigenous.

299. CHELONE. *L. Nutt. Gen.* 538.

[Greek, *Chelone*, a tortoise; the flower resembling the head of that animal.]

Calyx deeply 5-parted, with 3 bracts at base. *Corolla* bilabiate, ventricose. *Stamens* with a fifth *sterile filament* shorter than the rest, smooth above; *anthers* lanuginous. *Capsule* 2-celled, 2-valved. *Seeds* membranaceously margined.

Herbaceous: leaves opposite; flowers in crowded sub-imbricated terminal and axillary spikes. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. C. GLABRA, *L.* Leaves oblong-lanceolate, acuminate, serrate, smooth, subsessile. *Beck, Bot. p.* 266. ICON, *Bart. Am.* 3. *tab.* 76.

GLABROUS CHELONE. *Vulgò*—Shell-flower. Snake-head.

Root perennial. *Stem* 2 to 3 feet high, obtusely quadrangular, smooth, simple, or sparingly branched. *Leaves* 2 to 4 or 5 inches long, and half an inch to an inch and half wide, thick and subcoriaceous, smooth above, minutely pubescent beneath, prominently veined and somewhat rugose, on very short petioles. *Flowers* sessile, in thick crowded *spikes* 1 to 2or 3 inches in length. *Bracts* ovate-oblong, concave, coriaceous, smooth, shorter than the calyx. *Calyx* smooth; segments deeply divided (almost sepals), oblong, obtuse, concave, subcoriaceous. *Corolla* white, smooth, ventricose, lips nearly closed (much resembling the mouth of a tortoise); upper lip convex or vaulted, lower one villose within on the palate. *Filaments* villose, the fifth sterile one much shorter, smooth at summit; *anthers* woolly. *Style* longer than the stamens, persistent. *Capsule* ovoid, bisulcate, smooth. *Seeds* numerous, membranaceously margined.

Hab. Margins of swamps, and rivulets: frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. Two or three other species are enumerated in the U. States: But the C. *latifolia, Muhl.* as furnished to me by Mr. *Schweinitz*, seems to be very nearly allied to this.

300. PENTSTEMON. *Mitch. Nutt. Gen.* 539.

[Greek, *Pente*, five, and *Stemon*, a stamen; from the fifth abortive stamen.]

Calyx deeply 5-parted (or 5-sepalled). *Corolla* bilabiate, ventricose. *Stamens* with a fifth *sterile filament* longer than the rest, and bearded on the upper side; *anthers* smoothish. *Capsule* 2-celled, 2-valved. *Seeds* angular.

Herbaceous, or rarely suffruticose: leaves opposite; flowers paniculate. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. P. PUBESCENS, *Ait.* Stem pubescent; leaves lance-oblong, serrulate, sessile, amplexicaul; sterile filament bearded from the apex to below the middle. *Beck, Bot. p.* 266. ICON, *Bart. Am.* 3. *tab.* 103.

PUBESCENT PENTSTEMON.

Root perennial. *Stem* 9 to 15 inches high, erect, or decumbent, obtusely quadrangular, somewhat tomentose-pubescent, nearly simple, often branching from the base, or several from the root; summit paniculate, glandular-pubescent and viscid. *Leaves* 2 to 4 or 5 inches long, and 1 third of an inch to an inch wide, tapering to the apex, but rather obtuse, mostly narrowed towards the base, sessile and amplexicaul, serrate, or repand-denticulate, often nearly entire, smoothish,—the upper ones rather ovate-lanceolate and acuminate. *Flowers* in a terminal di- or tri-chotomous panicle. *Calyx* somewhat pubescent; segments (or rather sepals) ovate-lanceolate, acuminate, striate. *Corolla* palish violet-purple, pubescent, about an inch long; tube contracted below, inflated above; upper lip shorter, 2-

lobed, lower lip 3-lobed, villose within. *Stamens* smooth; the *sterile filament* declined, longer than the fertile ones, densely bearded on the upper side from the apex more than half way to the base. *Style* rather shorter than the stamens, somewhat persistent. *Capsule* ovoid, acute, smooth.

Hab. Hills along Schuylkill; Black Rock; not common. *Fl.* June. *Fr.* August.

Obs. Our plant appears to be the *var. angustifolia*, of *Ait. & Pursh;* and is somewhat rare, except on the N. Eastern side of the County. Six or eight additional species are enumerated in the U. States.

301. SCROPHULARIA. *L. Nutt. Gen.* 528.

[So named from its supposed virtue in curing *Scrophula.*]

Calyx 5-cleft; segments obtuse. *Corolla* subglobose; limb contracted, irregularly bilabiate; the upper lip longer, 2-lobed, often with an intermediate scale or abortive stamen, within; the lower lip 3-lobed, middle or lower lobe reflexed. *Capsule* roundish-ovoid, 2-celled, 2-valved; valves with inflexed margins at base, opening at apex.

Herbaceous, or rarely frutescent: leaves mostly opposite; flowers in terminal panicles, or spikes, with the peduncles mostly opposite, axillary, or bracteate at base. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. S. MARILANDICA, *L.* Leaves lance-ovate, acute, serrate, mostly rounded or subcordate at base, petioles ciliate; panicle oblong; pedicels loosely sub-fasciculate. *Beck, Bot. p.* 263.
S. nodosa, *var.* americana. *Mx. Am.* 2. *p.* 21.

MARYLAND SCROPHULARIA. *Vulgò*—Fig-wort. Carpenter's Square.

Root perennial. *Stem* 3 to 5 or 6 feet high, herbaceous, quadrangular, with a slight wing or ridge on the angles by the decurrence of the petioles, branched above, minutely pubescent, the panicle sprinkled with glandular or capitate hairs. *Leaves* 3 to 5 inches long, and 1 to 2 or 2 and a half inches wide, often unequally or doubly incised serrate, thin, smoothish, mostly obtuse at base; *petioles* half an inch to near 2 inches long, more or less ciliate-pubescent. *Panicle* 9 to 18 inches long (those terminating the branches shorter), and 2 to 4 inches in diameter, dark greenish purple, the branches short, opposite, or alternate, somewhat trichotomously and cymosely subdivided, with lance-linear or subulate *bracts* at base. *Calyx* subcampanulate, smooth; segments equal, erect, roundish-ovate, with a scarious purplish margin. *Corolla* dull purplish brown tinged with green, smooth; tube about twice as long as the calyx, globose, contracted at throat; limb unequally 5-lobed, sub-bilabiate, with a green spatulate scale within, at the base of the upper lip, resembling an abortive stamen with the grooved filament adnate to the corolla. *Stamens* conspicuous in the throat of the corolla, a little longer than the tube (involute before the flower expands); *filaments* broad and thick, minutely pubescent, pale green; *anthers* yellow, 1-celled, opening transversely on the summit. *Style* a little longer than the stamens, often curved over the lower reflexed lobe of the corolla; *stigma* obtuse. *Capsule* ovoid, acute, somewhat compressed and bisulcate, smooth. *Seeds* numerous, roughish-punctate.

Hab. Woodlands; fence-rows, &c. frequent. *Fl.* June—August. *Fr.* Aug—Octo.

Obs. The *root* of this, bruised into the form of a Cataplasm, is a popular application to phlegmons, &c. with a view to promote suppuration. One or two other species have been enumerated in the U. States; but I have a suspicion they will prove to be scarcely more than *varieties* of this.

302. BUCHNERA. *L.* *Nutt. Gen.* 531.

[In honor of *John Gottfried Buchner*; a German Botanist.]

Calyx tubular, 5-toothed. *Corolla* tubular; tube long, slender; limb flat, nearly equally 5-lobed, lobes cuneate-obovate, emarginate. *Stamens* short, included. *Capsule* ovoid-oblong, obtuse, 2-celled, 2-valved, opening at apex. *Seeds* minute, oblong, striate-suleate.

Herbaceous: leaves opposite; flowers opposite, in a terminal subcorymbose spike. *Nat. Ord.* 211. *Lindl.* SCROPHULARINEÆ.

1. B. AMERICANA, *L.* Leaves ovate-lanceolate, denticulate, scabrous, sessile; spike elongating, with the flowers rather distant. *Beck, Bot. p.* 263.

AMERICAN BUCHNERA.

Plant hairy and scabrous, becoming greyish-black in drying. *Root* perennial. *Stem* 1 to 2 feet high, slender, terete, mostly simple, appearing somewhat virgate at summit, from its small distant appressed leaves. *Leaves* 1 to near 2 inches long, and 1 fourth to 3 fourths of an inch wide, very scabrous (the hairs with indurated enlarged bases, as in the *Boragineæ*); upper leaves slender and acute, the lower ones often ovate, or ovate-oblong, and obtuse. *Flowers* opposite, sessile, in the axils of small ovate-lanceolate ciliate bract-like leaves, in a terminal *spike* which is at first short and sub-corymbose, finally elongated to 3 or 4 inches; *bracts* lance-linear, lateral. *Calyx* tubular, nerved, hairy, at first nearly cylindrical, finally tumid at base, or ovoid, slightly curved; teeth short, ovate, acuminate. *Corolla* deep purple; tube twice as long as the calyx, a little curved, hairy internally and externally; the 2 upper lobes of the limb rather narrower than the others. *Capsule* ovoid-oblong, somewhat oblique and gibbous at base; the apex obtuse, compressed, and margined; valves sulcate on the back, over the dissepiment which arises in the middle.

Hab. Meadows, and moist Serpentine banks: not common. *Fl.* Aug. *Fr.* Octo.

Obs. This was first observed along the Marlborough Street road, near Hayes' Bridge; and it has since been found in considerable quantity on the moist sterile banks of Serpentine rock, in Willistown. The flowers, at a little distance, resemble those of *Phlox.* It is the only species known in the U. States.

303. PHRYMA. *L.* *Nutt. Gen.* 520.

[A name of unknown derivation.]

Calyx tubular, bilabiate; upper lip longer, trifid; lower one bidentate. *Corolla* tubular, bilabiate; upper lip short, emarginate; lower lip much longer, 3-lobed. *Capsule* thin and evanescent. *Seed* solitary.

Herbaceous: leaves opposite; flowers opposite, tribracteate, in slender terminal spikes; fruit reflexed. *Nat. Ord.* 220. *Lindl.* VERBENACEÆ.

1. P. LEPTOSTACHYA, *L.* Leaves ovate, acute, coarsely and unequally crenate-serrate, petiolate. *Beck, Bot. p.* 284.

SLENDER-SPIKED PHYRMA. *Vulgò*—Lop-seed.

Root perennial. *Stem* 2 to 3 feet high, obtusely quadrangular, pubescent, with a few opposite axillary virgate branches above. *Leaves* 3 to 6 inches long, and an inch and half to 3 inches wide, thinnish, pubescent, rounded at base, or abruptly narrowed to a *petiole* half an inch to near 2 inches in length; the small leaves on the branches sessile, or subsessile. *Flowers* opposite, subsessile, in slender simple *spikes* 3 to 6 or 8 inches in length, terminating the virgate branches; each

flower with 3 small subulate ciliate persistent *bracts* at base. *Calyx* tubular, somewhat compressed, contracted at the throat, striate-nerved, minutely pubescent, gibbous on the under side near the base; upper lip with 3 subulate purple teeth recurved at the point; lower lip with 2 very short teeth; after flowering the calyx is reflexed, and closely pressed to the rachis. *Corolla* very pale purple, or whitish tinged with purple, small; the lower lip elongated, spreading, 3-lobed, veined. *Stamens* included. *Style* longer than the stamens, somewhat persistent, obliquely inserted near the apex of the seed. *Seed* 1, rather large, compressed, lance-oblong, striate-grooved, greenish, coated with a thin transparent membrane, and enclosed in the calyx.

Hab. Borders of woods; fence rows, &c. frequent. *Fl.* July. *Fr.* August—Sept.

Obs. A curious plant; and the only known species of the genus.

304. VERBENA. *L. Nutt. Gen.* 521.

[Celtic, *Ferfaen*, to remove stone; from its supposed medical virtues.]

Calyx tubular, 5-toothed, one of the teeth often shorter. *Corolla* tubular, somewhat funnel-form, with the limb rather unequally 5-lobed. *Capsule* thin and evanescent. *Seeds* mostly 4.

Herbaceous: leaves opposite; flowers mostly in terminal spikes, bracteate. *Nat. Ord.* 220. *Lindl.* VERBENACEÆ.

1. V. HASTATA, *L.* Leaves oblong-lanceolate, tapering and acute, incised-serrate, petiolate, the lower ones often hastate-lobed at base; spikes linear, erect, corymbose-paniculate; flowers somewhat imbricated. *Beck, Bot. p.* 283.

Var. b. oblongifolia? *Nutt.* Leaves ovate-lanceolate, sharply serrate; spikes filiform, loosely paniculate; flowers distinct, smaller. *Bart. Phil.* 2. *p.* 41.

V. paniculata? *Pers. Syn.* 2. *p.* 138. *Muhl. Catal. p.* 57. *Pursh, Am.* 2. *p.* 416. *Nutt. Gen.* 2. *p.* 40. *Ell. Sk.* 2. *p.* 98. *Lindl. Ency. p.* 520. *Eat. Man. p.* 384.

HASTATE VERBENA. *Vulgò*—Blue Vervain. Simpler's Joy.

Root perennial. *Stem* erect, 3 to 5 feet high, obtusely quadrangular, roughish-pubescent, mostly purple, with rather short erect axillary branches above. *Leaves* 3 to 5 inches long, and 3 fourths of an inch to near 2 inches wide, scabrous, tapering acuminately to a sharp point, unequally or doubly incised-serrate, with about half an inch at the apex often entire, and the lower ones often with a linear-lanceolate serrate lobe on each side at base; *petioles* half an inch to an inch long, mostly with tufts of small leaves in the axils. *Spikes* 1 or 2 to 5 inches long, purple, thickish, linear, dense-flowered, subimbricate, erect, somewhat fascicled or corymbose-paniculate (in *var. b.* 2 to 6 or 8 inches long, slender, and more spreading, with the flowers smaller and distinct); *flowers* sessile, with each a lance-ovate acuminate keeled *bract* at base shorter than the calyx. *Calyx* scabrous, with 5 short acuminate teeth, and as many keel-like ribs. *Corolla* bluish-purple, pubescent. *Seeds* 4, finally naked, oblong, triquetrous, convex externally, slightly margined and nerved, brown.

Hab. Swampy meadows; and along streams: frequent. *Fl.* July—Aug. *Fr.* Octo.

Obs. The *variety* with slender filiform spikes, (which I suppose to be the *var. oblongifolia, Nutt.*) occurs along the Brandywine; and seems to be pretty distinct. If it be really the V. *paniculata*, of *Lamarck*, I am by no means sure it ought not to be continued as a species, under that name.

2. V. URTICÆFOLIA, *L.* Leaves ovate and lance-ovate, acute, serrate, petiolate; spikes filiform, terminal and axillary; flowers distinct. *Beck, Bot. p.* 284.

NETTLE-LEAVED VERVAIN. *Vulgò*—Common Vervain.

Root perennial. *Stem* erect, 2 to 3 or 4 feet high, obtusely quadrangular, hirsutely pubescent, with slender axillary spreading branches above. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, somewhat acuminate, coarsely serrate, pubescent, abruptly narrowed at base to a *petiole* half an inch to 3 quarters in length. *Spikes* 1 or 2 to 5 or 6 inches long, green, filiform and rather flaccid; *flowers* distinct, and finally a little distant, small, sessile, with each a lance-ovate acuminate *bract* at base shorter than the calyx. *Calyx* scabrous, with 5 lanceolate teeth, the segments membranaceously united into a tube. *Corolla* white, the throat closed with a delicate white villus. *Seeds* 4, resembling the preceding in form, greenish.

Hab. Pastures, roadsides, and open woodlands: common. *Fl.* July-Aug. *Fr.* Sept.

Obs. Towards autumn this plant becomes covered with a glaucous pulverulent matter, resembling *mould*. It is regarded as a *weed* in our pastures. Eight or nine additional species have been enumerated in the U. States,—of which it is probable the V. *spuria*, *L.* may yet be found in this County—it having been collected in the adjacent districts.

305. MELAMPYRUM. *L. Nutt. Gen.* 547.

[Greek, *Melas*, black, and *Pyros*, wheat; the seeds resembling grains of wheat.]

Calyx 4-cleft; segments slender. *Corolla* ringent; upper lip laterally compressed, with the margin folded back; lower lip grooved, nearly equally 3-lobed. *Capsule* compressed, obliquely ovate, sub-acuminate, 2-celled, opening at the upper margin; cells 2-seeded; *dissepiment* contrary. *Seeds* cylindric-oblong, cartilaginous.

Herbaceous: leaves opposite; flowers axillary, in a terminal leafy raceme. *Nat. Ord.* 212. *Lindl.* RHINANTHACEÆ.

1. M. AMERICANUM, *Mx.* Leaves lance-linear, and ovate-lanceolate, the floral ones setaceously sinuate-dentate at base. *Beck, Bot. p.* 270. M. lineare. *Willd. Sp.* 3. *p.* 200. *Pers. Syn.* 2. *p.* 151. *Muhl. Catal. p.* 57. *Pursh, Am.* 2. *p.* 430. *Nutt. Gen.* 2. *p.* 58. *Bart. Phil.* 2. *p.* 49. *Ell. Sk.* 2. *p.* 133. *Florul. Cestr. p.* 72. *Torr. Comp. p.* 244. *Also*, M. latifolium. *Muhl. l. c. Nutt. l. c.*

AMERICAN MELAMPYRUM. *Vulgò*—Cow-wheat.

Root annual. *Stem* 8 to 12 or 15 inches high, subterete, somewhat pubescent in lines, brachiately branching. *Leaves* 1 to 2 inches long, and 1 fourth to 2 thirds of an inch wide, smoothish; the lower ones sublinear, entire, obtuse; those above ovate-lanceolate, mostly entire, acuminately tapering to the apex, but rather obtuse; the floral ones ovate-lanceolate, acute, whitish at base, with a few slender divaricate teeth on each side; *petioles* 1 eighth to 1 fourth of an inch long. *Flowers* axillary, opposite, on short peduncles. *Calyx* minutely roughish-pubescent; segments lance-linear, distant. *Corolla* about half an inch long, ochroleucous, with tinges of yellow and purple, the upper lip hairy within. *Capsule* membranous, veined, minutely scabrous, near half an inch long and 1 fourth of an inch wide, compressed, the upper margin curved, the lower nearly straight, opening at the upper margin. *Seeds* 4, smooth, dark purple, or purplish black, with a pale brown base.

Hab. Dry hilly woodlands; Mica-slate hills: frequent. *Fl.* June-July. *Fr.* Aug.

Obs. Our plant appears to be the *var. latifolium, Bart. Phil. & Eaton,*—or the M. *latifolium, Muhl. & Nutt.* The *narrow-leaved variety,* (which I take to be the original of the M. *lineare, Lam.*) is abundant in the Pines of New Jersey; but I have not found it here. One other species is said to have been found in the U. States.

306. PEDICULARIS. *L. Nutt. Gen.* 536.

[Latin, *Pediculus,* a louse; but the reason of the name seems undetermined.]

Calyx ventricose, 2- 3- or 5-cleft, with foliaceous segments, or sometimes obliquely truncate. *Corolla* ringent; upper lip laterally compressed, galeate, emarginate; lower lip spreading, 3-lobed, middle lobe narrower. *Capsule* compressed, oblique, acuminate, 2-celled, opening at the upper margin; *dissepiment* contrary. *Seeds* several in each cell.

Herbaceous: leaves opposite, or alternate, often pinnatifid; flowers mostly aggregated in short terminal bracteate spikes. *Nat. Ord.* 212. *Lindl.* RHINANTHACEÆ.

1. P. PALLIDA, *Pursh.* Stem erect, somewhat branched, smooth; leaves sub-opposite, lanceolate, crenately incised, with the segments dentate-serrate; calyx bifid, segments roundish-ovate, foliaceous, dentate; galea of the corolla truncate at apex. *Beck, Bot. p.* 269.
P. lanceolata. *Mx. Am.* 2. *p.* 18. *Muhl. Catal. p.* 58. Also, *Pursh, Am.* 2. *p.* 424.
Also, P. sceptrum (serotina). *Muhl. l. c.*

PALE PEDICULARIS.

Root perennial. *Stem* 1 to 2 feet high, terete below, obtusely quadrangular above, smoothish, with a few axillary branches near the summit. *Leaves* 2 to 3 or 4 inches long, and half an inch to 3 quarters wide, subcoriaceous, smoothish, or sparingly pilose, rugosely veined; *petioles* 1 fourth to 1 third of an inch long. *Flowers* in terminal *spikes* 1 to 2 inches in length; *bracts* lance-ovate, narrowed at base, crenate-serrate, often incised below the middle, and fringed with membranaceous cilia. *Calyx* smooth, bifid; segments foliaceous, rounded. *Corolla* near an inch long, pale greenish yellow, or straw-color, smooth; galea emarginately truncate. *Style* included. *Capsule* short, ovate.

Hab. Low grounds, and thickets: frequent. *Fl.* August—September. *Fr.* Octo.

2. P. CANADENSIS, *L.* Stem oblique, simple, pubescent; leaves alternate, lance-oblong, pinnatifid, with the segments crenate-dentate; calyx obliquely truncate; galea of the corolla with 2 setaceous teeth at apex. *Beck, Bot. p.* 269.
Also, P. gladiata. *Mx. Am.* 2. *p.* 18. *Muhl. Catal. p.* 58. *Pursh, Am.* 2. *p.* 425. *Nutt. Gen.* 2. *p.* 50. *Florul. Cestr. p.* 71. *Torr. Comp. p.* 242. *Beck, l. c. Eat. Man. p.* 252.

CANADIAN PEDICULARIS. *Vulgò*—Wood Betony. Louse-wort.

Root perennial. *Stem* 6 to 12 or 15 inches long, mostly oblique, or decumbent, simple, or branching from the root, pubescent. *Leaves* 1 to 4 or 5 inches long, and 1 third of an inch to an inch and half wide, pinnatifid, villose when young, finally smoothish; *petioles* half an inch to 2 inches long, ciliate (the radical petioles 2 to 5 or 6 inches long). *Spikes* terminal, capitate, leafy at base, finally elongating; *bracts* oblong, sublinear, and spatulate, crenate-dentate at apex, villose-ciliate below. *Calyx* villose, obliquely truncate. *Corolla* near an inch long,

yellow, often tinged with brownish purple, smooth; galea truncate, with a setaceous tooth terminating each margin. *Style* a little exserted. *Capsule* compressed, oblique and a little gibbous at base, with a lance-oblong or ensiform acumination 1 third to half an inch or more in length. *Seeds* oval, angular.

Hab. Woodlands, thickets, and knolls: frequent. *Fl.* May. *Fr.* June.

Obs. This plant is variable, in size and appearance, in different localities; and I am now inclined to think the P. *gladiata*, of Authors, is nothing more than a *variety*. It is doubtful whether any other species have been found in the U. States, —though several are enumerated in British America.

307. EUCHROMA. *Nutt. Gen.* 542.

[Greek, *Eu*, good, and *Chroma*, color; alluding to its colored bracts.]

Calyx ventricose, spathe-form and bifid, or 4-cleft. *Corolla* bilabiate; upper lip long, linear, embracing the style and stamens; lower lip short and 3-lobed. *Anthers* linear, with unequal lobes, often cohering. *Capsule* compressed, elliptic-ovate, acute, 2-celled, 2-valved; *dissepiment* contrary, bipartite. *Seeds* numerous, coated with a diaphanous cellular membrane.

Herbaceous: leaves alternate; flowers axillary, solitary, sessile, marcescent. *Nat. Ord.* 212. *Lindl.* RHINANTHACEÆ.

1. E. COCCINEA, *Nutt.* Leaves sessile, linear-oblong, pinnatifidly incised, segments linear, divaricate; bracts trifid, colored at summit, longer than the flowers; calyx bifid, nearly as long as the corolla. *Beck, Bot. p.* 270.

Bartsia coccinea. *Willd. Sp.* 3. *p.* 185. *Mx. Am.* 2. *p.* 17. *Pers. Syn.* 2. *p.* 150. *Ait. Kew.* 4. *p.* 1. *Muhl. Catal. p.* 57. *Pursh, Am.* 2. *p.* 429. *Bigel. Bost. p.* 244. *Lindl. Ency. p.* 524.

CRIMSON EUCHROMA. *Vulgò*—Painted cup. Red Robin.

Root perennial? (annual or biennial, *Nutt. Ell.* biennial, *Eat.*). *Stem* 9 to 18 inches high, erect, simple, sometimes several from the same root, pubescent, often dark purple. *Leaves* 1 to 2 inches long, and 1 eighth to half an inch wide, 3-nerved, pubescent; the *radical* ones often spatulate-linear, entire on the margin, and incised at apex; the *stem-leaves* linear, with 2 or 3 very long narrow linear divaricate or diverging segments on each side; the *floral leaves*, or *bracts*, cuneate, trifid, villose and ciliate, crowded at the summit of the stem, the segments crimson. *Calyx* with the tube ventricose, membranaceous, villose; segments linear-oblong, retuse, tipt with crimson. *Corolla* dull greenish yellow; upper lip 2 or 3 times as long as the lower, roughish-pubescent externally. *Stamens* shorter than the upper lip of the corolla; anthers cohering, or sometimes free. *Style* exserted; *stigma* emarginate. *Capsule* about half an inch long, elliptic-ovate, slightly oblique, smooth, dark brown; valves grooved opposite the dissepiment; the dissepiment separating into 2 plates. *Seeds* minute, somewhat pyriform, coated with a reticulately rugose-pitted arillus-like membrane.

Hab. Low grounds; margins of swamps, &c. frequent. *Fl.* April—May. *Fr.* June.

Obs. There is a *variety* of this (*var. pallens, Pursh*),—with the bracts colored *yellow*, and the whole plant of a pale yellowish green,—which I have seen in the meadows at Downingtown; but it is somewhat rare. Mr. *Nuttall* describes one other species of this genus in the U. States, far west.

308. EPIPHEGUS. *Nutt. Gen.* 549.

[Gr. *Epi*, upon, & *Phegos*, the beech; from its parasitic connection with that tree.]

Monoicously polygamous: Abortive Fl. above: *Calyx* 5-toothed. *Corolla* tubular, compressed, bilabiate; upper lip sub-emarginate; lower lip 3-toothed. *Stamens* about as long as the corolla. *Style* exserted; *stigma* capitate, emarginate; *ovary* abortive. Fertile Fl. below: *Calyx* 5-toothed. *Corolla* small, rarely expanding, deciduous. *Style* short. *Capsule* obliquely turbinate, obtuse, 1-celled, opening at summit.

Herbaceous: parasitic; destitute of verdure; leafless; virgately branching; branches simple, floriferous in their whole extent. *Nat. Ord.* 210. *Lindl.* Orobanchæ.

1. E. americanus, *Nutt.* Much branched; flowers alternate, rather distant, subsessile. *Beck, Bot. p.* 260.
E. virginianus. *Bart. Phil.* 2. *p.* 50. *Eat. Man. p.* 133.
Orobanche virginiana. *Willd. Sp.* 3. *p.* 351. *Mx. Am.* 2. *p.* 26. *Pers. Syn.* 2. *p.* 181. *Muhl. Catal. p.* 59. *Pursh, Am.* 2. *p.* 431. *Ell. Sk.* 2. *p.* 136. *Bigel. Bost. p.* 245.

American Epiphegus. *Vulgò*—Beech-drops. Cancer-root.

Plant pale yellowish brown. *Root* perennial? tuberous, fleshy, with numerous short coarse coralloid fibres intermingled with scales. *Stem* 6 to 12 or 15 inches high, angular, striate, somewhat pubescent in lines, with numerous virgate branches. *Flowers* in the axils of lance-ovate scales. *Calyx* short, cup-shaped, often with 1 or 2 subulate *bracts* at base. *Corolla* of the upper *abortive* flowers about half an inch long, whitish, with purple stripes,—of the lower *fertile* flowers short, not opening, apparently circumscissed below, and elevated on the apex of the capsule. *Stamens* of the *abortive* flowers free,—of the *fertile* flowers short, the *anthers* cohering with the *stigma* in the apex of the unexpanded corolla, which crowns the ovary like the calyptra of the mosses. *Capsule* obovoid, obtuse or truncate, semi-bivalved. *Seeds* numerous, minute, elliptic, striate, shining, pale straw-color.

Hab. Woodlands, under Beech trees: frequent. *Fl.* September. *Fr.* October.

Obs. This singular plant is remarkable for being found (like *Virgil's* Shepherd) "*sub tegmine Fagi*",—and seems to be exclusively confined to the roots, or immediate vicinity, of *Beech trees.* It possesses considerable astringency; and was formerly in some repute as a remedy for cancerous ulcers, dysentery, &c. It is the only species of the genus.

309. OROBANCHE. *L. Nutt. Gen.* 548.

[Gr. *Orobos*, a vetch, & *anchein*, to strangle; being supposed hurtful to that plant.]

Calyx 2 to 5-cleft; segments often unequal. *Corolla* tubular, subringent; limb 4 or 5-lobed. *Ovary* seated in a fleshy disk. *Capsule* ovoid, acuminate, 1-celled, 2-valved. *Seeds* numerous.

Herbaceous: parasitic? destitute of verdure; leafless, or clothed with scales; flowers in a terminal spike, or solitary. *Nat. Ord.* 210. *Lindl.* Orobanchæ.

1. O. americana, *L.* Stem simple, covered with ovate-lanceolate imbricated scales; flowers in a thick terminal smooth spike; calyx unequally 5-cleft, bracteate at base; stamens exserted. *Beck, Bot. p.* 260.

American Orobanche. *Vulgò*—Squaw-root.

Plant 4 to 6 or 8 inches high, yellowish brown, smooth, mostly growing in clusters. *Root* perennial, somewhat tuberous, parasitic? *Stem* 1 to 3 or 4 inches long, thick and fleshy, clothed with numerous large imbricated persistent parchment-like scales. *Spike* 2 to 5 inches long, dense and thick (about an inch in diameter); *flowers* subsessile, in the axils of appressed lance-ovate acuminate scales (bracts, *Willd.*). *Calyx* irregularly 5-cleft; segments jagged, the lower ones more deeply parted; *bracts* 2 at the base of the calyx, lateral, sessile, ovate-lanceolate, denticulate, somewhat keeled and mucronate. *Corolla* dirty white, or pale brown; tube a little curved, ventricose below, contracted above; limb unequally 5-lobed. *Stamens* longer than the corolla; *anthers* sagittate. *Style* thickish, about as long as the stamens; *stigma* depressed-capitate. *Capsule* ovoid, acuminate. *Seeds* small, obovoid, pale brown, shining.

Hab. Woodlands; Brandywine; Valley hills, &c. not common. *Fl.* June. *Fr.* July

Obs. Collected in Pikeland, by Mr. JOSEPH JACOBS, prior to 1827; and subsequently by several other gentlemen, in different localities.

2. O. UNIFLORA, *L.* Stem very short, often branched at base, covered with oblong scales; flowers solitary, on scape-like pubescent peduncles; calyx equally 5-cleft, naked at base; stamens included. *Beck. Bot. p.* 260.

O. biflora. *Nutt. Gen.* 2. *p.* 59. *Florul. Cestr. p.* 72.

ONE-FLOWERED OROBANCHE.

Plant 4 to 6 inches high, pale brownish yellow, pubescent. *Root* perennial, somewhat tuberous, with coarse fibres, parasitic? *Stem* half an inch to an inch and half long, often branched at base, or several from the same root, covered with a few oblong or ovate-oblong scales, which are somewhat sheathing. *Peduncles* 2 to 4 or 5 inches long, erect, slender, scape-like, pubescent, mostly 2 or 3 on each short stem. *Calyx* sub-campanulate, membranous, nerved, pubescent; segments lanceolate, acute, equal. *Corolla* pubescent, veined, yellowish white, tinged with purple; tube a little curved, ventricose below; limb rather unequally 5-lobed, and deeper cleft than in the preceding; lobes bordered with a delicate purple pubescence; palate with 2 yellow ridges, and corresponding grooves beneath. *Stamens* shorter than the corolla; *anthers* white, oval, 2-lobed, lobes with a short acumination at base. *Style* as long as the stamens, persistent; *stigma* bifid, lobes acuminate, spreading. *Capsule* ovoid, acuminate. *Seeds* minute, oblong, striate.

Hab. Hilly woodlands: frequent. *Fl.* May—June. *Fr.* July.

Obs. This is called *parasitic*, in the books; but I have never observed any particular connection between it and other plants. Two other species are enumerated in the U. States.

CLASS XIV. TETRADYNAMIA.*

Order 1. Siliculosa.

a. *Septum broad, oval: valves flat, or internally concave.*

* The plants of this Class constitute a perfectly natural groupe (*Nat. Ord.* 9. *Lindl.* CRUCIFERÆ.). They are generally *herbaceous*, and acrid to the taste, with terete, or sub-angulate stems, and alternate branches: *leaves* alternate, without stipules; *flowers* mostly in terminal subcorymbose racemes: *sepals* 4, cruciate, often gibbous at base, deciduous; *petals* 4, cruciate, alternate with the sepals,

310. EROPHILA. *DC. Syst.* 2. *p.* 356.

[Greek, *Er*, *eros*, spring, and *phileo*, to love; in allusion to its early flowering.]

Calyx equal at base, rather loose. *Petals* 2-parted. *Filaments* without teeth. *Silicle* oval, or oblong; valves flattish; septum membranaceous; stigmas sessile. *Seeds* numerous, in a double series, not margined; *cotyledons* accumbent.

1. E. VULGARIS? *DC.* var. *americana.* Silicles elliptic-oblong, shorter than the pedicels; scape 5 to 15-flowered.
Also, E. americana. *DC. Prodr.* 1. *p.* 172.
E. vulgaris. *Hook. Am.* 1. *p.* 56. *Lindl? Ency. p.* 544. *Beck, Bot. p.* 26.

Draba verna. *Willd? Sp.* 3. *p.* 426. *Ait? Kew.* 4. *p.* 91. *Muhl. Catal. p.* 60. *Pursh, Am.* 2. *p.* 433. *Nutt. Gen.* 2. *p.* 62. *Bart. Phil.* 2. *p.* 52. *Bart. Am.* 3. *p.* 49 (ICON, *tab.* 88. *f.* 2.). *Florul. Cestr. p.* 73. *Torr. Comp. p.* 247. *Bigel. Bost. p.* 250. *Eat. Man. p.* 127. var. americana. *Pers. Syn.* 2. *p.* 190.

COMMON EROPHILA. *Vulgò*—Whitlow grass. April flower.

Root annual. *Leaves* radical, 1 third of an inch to an inch long, and 1 line to 1 third of an inch wide, lance-oblong, or oblanceolate, narrowed at base, denticulate near the apex, hairy, hairs branched. *Scape* 1 to 4 or 5 inches high, often several from the same root, erect, or decumbent, striate, pubescent. *Flowers* small, racemose; *pedicels* elongating, finally half an inch to an inch long; *calyx* hairy; *petals* white, divided half way to the base. *Silicles* about 1 third of an inch long, and about 3 times as long as wide; valves soon falling off, leaving the seeds adhering to the margins of the septum. *Seeds* small, oval, brown.

Hab. Sandy banks; roadsides, &c. common. *Fl.* March—April. *Fr.* May.

Obs. From the specimens which I have seen, I incline to think that ours is scarcely more than a *variety* of the European plant: But I concur with Dr. *Beck*, in the opinion, that the *Draba hispidula, Mx.* (as I understand it,) is quite distinct. This latter may probably yet be found in Chester County,—as it was collected in the adjoining County of Lancaster, by D. TOWNSEND, Esqr. There is no other species of *Erophila* known in the U. States.

311. COCHLEARIA. *Tournef. DC. Syst.* 2. *p.* 358.

[Latin, *Cochleare*, a spoon; from a fancied resemblance in the leaves.]

Calyx equal at base, spreading. *Petals* entire. *Filaments* without teeth. *Silicles* roundish-ovoid, or oblong; valves ventricose; style very short. *Seeds* mostly numerous, not margined; *cotyledons* accumbent.

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stamens 6,—of which 2 are shorter, solitary, and opposite the lateral sepals,—and 4 longer, in pairs, opposite the anterior and posterior sepals; *disk* mostly with green *glands* at the base of the stamens,—inside of the short ones, and outside or rather alternating with the long ones; *ovary* superior; *stigmas* 2, opposite or over the placental sutures, connate; *fruit*, of the first order a *Silicle*, or short pod, —of the second order a *Silique*, or long pod; *pods* mostly 2-celled, 2-valved, with the valves separating from the septum (rarely indehiscent); *seeds* attached near the margins of the septum, along both sutures.

1. C. ARMORACIA, L. *Radical leaves oblong, crenate, stem-leaves lanceolate, dentate, or incised, sessile; silicle elliptic.* Beck, Bot. p. 27.

Vulgò—*Horse-Radish.* [*bano picante.*

Gall.—*Moutarde des Capucins.* Germ.—*Der Meer-rettig.* Hisp.—*Rá-*

Root *perennial, large, fleshy, tapering, white, very acrid.* Stem 2 *to* 3 *feet high, erect, angular-striate, smooth, with axillary branches above.* Radical leaves 8 *to* 12 *or* 15 *inches long, and* 3 *to* 6 *inches wide, oblong, rather obtuse, crenate, smooth,* petioles 4 *to* 10 *or* 12 *inches long, channelled on the upper side, and somewhat margined;* stem-leaves *smaller, lanceolate, narrowed at base, sessile, the lower ones often pinnatifidly incised, the upper ones incised-dentate, or sometimes entire.* Racemes *corymbose when flowering, elongating;* pedicels 1 *third to half an inch long, slender.* Petals *white.* Silicles *elliptic, mostly abortive.*

Hab. *Gardens, &c. frequent.* Fl. *May—June.* Fr. *June—July.*

Obs. *Much cultivated for its pungently acrid root, which is in general use as a condiment; and is, moreover, a valuable antiscorbutic:—a property highly characteristic of the whole Class. The plant thrives best in moist situations. The* C. officinalis, *or* Scurvy Grass, *is occasionally to be met with in gardens: but is scarcely entitled to be enumerated among our cultivated plants. The* "Scurvy grass" *of our Seeds-men, and Gardeners, is the* Barbarea præcox, *of* Ait. *and* DC. *There are no native species of* Cochlearia *in the U. States.*

312. CAMELINA. *Crantz. DC. Syst. 2. p. 514.*

[Gr. *Chamai*, dwarf, and *Linon*, flax; from a fancied resemblance in the plants.]

Calyx equal at base. *Petals* entire. *Filaments* without teeth. *Silicle* obovoid, or subglobose, obtuse, entire, mucronate with the persistent style. *Seeds* numerous, oblong, not margined; *cotyledons* incumbent.

1. C. SATIVA, *Crantz.* Leaves lanceolate, sessile, sagittate; silicles obovoid-pyriform, inflated, margined, mucronate with the longish style. *Beck, Bot. p. 27.*

Myagrum sativum. *Willd. Sp. 3. p. 408.*

Alyssum sativum. *Muhl. Catal. p. 60. Florul. Cestr. p. 73.*

CULTIVATED CAMELINA. *Vulgò*—Wild Flax. Gold of Pleasure.

Gallicè—Cameline cultivée. *Germ.*—Der Leindotter, *Hisp.*—Miagro.

Root annual. *Stem* 18 inches to 3 feet high, erect, slender, terete, sub-pubescent, simple, paniculate at summit. *Leaves* 1 to near 3 inches long, and 1 fourth to half an inch wide, entire, or obsoletely denticulate, roughish-pubescent, sessile, sagittate with acute amplexicaul lobes at base; *pubescence* of the stem and leaves often branched, or bifurcate. *Racemes* corymbose-paniculate; *pedicels* half an inch to an inch long. *Petals* yellow. *Silicles* about 1 fourth of an inch long; *style* about half as long as the silicle, persistent, splitting with the dehiscent valves.

Hab. Cultivated grounds: not very common. *Fl.* May—June. *Fr.* July.

Obs. This foreigner was formerly frequent in wheat fields,—and sometimes abundant among Flax crops, when that plant was extensively cultivated: But it is now becoming rare. Some of our old-fashioned farmers were so benighted in their notions, as to believe that it was a sort of *degenerate flax*, produced by sowing flax-seed in a burnt soil! The plant is said to be cultivated, in Germany, for the sake of the oil afforded by the seeds. There are no native species in the U. States.

b. *Septum narrow; valves keeled, or gibbous.*

313. CAPSELLA. *Mœnch. DC. Syst. 2. p.* 383.
[Diminutive of *Capsula*, a capsule, or little box; alluding to the fruit.]

Calyx equal at base. *Petals* entire. *Filaments* without teeth. *Silicle* laterally compressed, obcordate-cuneate; septum sublinear; valves boat-shaped, not winged on the back; style short. *Seeds* numerous, oblong; *cotyledons* incumbent.

1. C. Bursa pastoris, *Mœnch.* Radical leaves pinnatifid, stem-leaves lanceolate, sessile, sagittate at base. *Beck, Bot. p.* 25. Thlaspi Bursa pastoris. *Willd. Pers. Pursh, &c. &c.*

Shepherd's purse Capsella. *Vulgò*—Shepherd's Purse. [Pastor. *Gall.*–Bourse de Pasteur. *Germ.*–Die Hirtentasche. *Hisp.*–Bolsa de

Root annual. *Stem* 3 or 4 to 18 inches high, striate, more or less hirsute, and often branched. *Radical leaves* 2 or 3 to 6 or 8 inches long, and half an inch to 1 or 2 inches wide, oblong, mostly pinnatifid and dentate (sometimes oblanceolate and repand-denticulate), narrowed to a petiole at base, pilose with short stellate hairs; *stem-leaves* linear-lanceolate, often entire, auriculate and amplexicaul at base. *Racemes* at first corymbose, finally elongating; *pedicels* half an inch to an inch long. *Petals* white. *Silicle* about 1 fourth of an inch long, deltoid, or cuneate, truncate and emarginate. *Seeds* oblong, bisulcate on each side (or cotyledons incumbent—"accumbent," *DC.*), reddish brown.

Hab. Fields, roadsides, &c. common. *Fl.* April—September. *Fr.* June—Octo.

Obs. An introduced plant; and rather a troublesome weed in cultivated grounds. It is very variable, both in size and appearance; but is readily known by its fruit. It is the only species of the genus, as now established.

314. LEPIDIUM. *L. Nutt. Gen.* 554.
[Greek, *Lepis*, a scale; from the form of the silicles.]

Calyx equal at base. *Petals* entire. *Filaments* without teeth. *Silicle* laterally compressed, orbicular-ovate, or oval; septum linear-elliptic; valves keeled, rarely ventricose, often winged at apex and emarginate; cells 1-seeded. *Seeds* compressed; *cotyledons* incumbent, or rarely accumbent.

1. L. sativum, *L. Leaves oblong, variously incised and pinnatifid; silicles elliptic-ovate, winged and emarginate.* DC. Prodr. 1. p. 204.

Cultivated Lepidium. Vulgò—*Pepper-grass. Tongue-grass.* Gallicè–*Cresson-alénois.* Germ.–*Die Garten-kresse.* Hisp.–*Lepidio.*

Root *annual.* Stem 9 *to* 18 *inches high, angular, smooth, glaucous, corymbosely branched above.* Leaves 1 *to* 3 *inches long, sparingly pilose, deeply divided into linear or cuneate segments, lower ones on petioles* 1 *to* 2 *inches long.* Pedicels 1 *fourth to* 1 *third of an inch long.* Petals *white.* Silicles *with a winged margin and a narrow sinus at apex;* style *about as long as the margin.* Seeds *compressed, bisulcate on each side* (*or cotyledons incumbent*), *dark purple, or reddish brown.*

Hab. *Gardens: frequent.* Fl. *June—July.* Fr. *August.*

Obs. *A pleasant antiscorbutic Cress; and often cultivated for the table.*

2. L. VIRGINICUM, *L.* Leaves linear-lanceolate, incised-serrate; stamens often 2; silicles orbicular, emarginate; cotyledons accumbent. *Beck, Bot. p.* 27.

VIRGINIAN LEPIDIUM. *Vulgò*—Wild Pepper-grass.

Root annual. *Stem* 9 to 15 inches high, subterete, minutely roughish-pubescent, corymbosely branched above. *Leaves* 1 to 2 inches long, and 1 eighth to half an inch wide, subsessile, or narrowed to a short petiole at base, smoothish, the lower ones often pinnatifidly incised, the upper ones sometimes entire. *Racemes* cylindric; *pedicels* numerous, 1 fourth to 1 third of an inch long. *Petals* white, very small. *Silicles* keeled, with a narrow wing at apex, emarginate; *style* very short. *Seeds* compressed, obliquely ovate, margined, with one groove on each side (or cotyledons accumbent—"incumbent," *DC.*), pale reddish brown.

Hab. Fields, and roadsides: common. *Fl.* May—September. *Fr.* July—Octo.

Obs. The flowers of this are often *Diandrous*, by abortion. One or two additional species (probably introduced) are enumerated in the U. States.

Order 2. Siliquosa.

a. *Silique longitudinally dehiscent; septum linear.*

315. BARBAREA. *Br. Nutt. Gen.* 559.

[So named, from the plant having been dedicated to *St. Barbara.*]

Calyx subequal at base, erect. *Petals* unguiculate; border entire. *Filaments* without teeth. *Silique* 4-angled, and somewhat ancipital; valves concave, keeled. *Seeds* in a single series; *cotyledons* accumbent.

1. B. VULGARIS, *Br.* Lower leaves lyrate, the terminal lobe rounded; upper leaves obovate, sinuate-dentate, often pinnatifid at base; siliques acuminate. *Beck, Bot. p.* 29.
Erysimum Barbarea. *Willd. Sp.* 3. *p.* 509. *Pers. Syn.* 2. *p.* 199. *Muhl. Catal. p.* 61.

COMMON BARBAREA. *Vulgò*—Scurvy-grass. Yellow Rocket.

Gallicè–Velard de Ste. Barbe. *Germanicè*.–Die Winter-kresse.

Root perennial. *Stem* 1 to 2 feet high, sulcate-striate, smooth, branched above. *Leaves* 1 to 3 or 4 inches long, and half an inch to an inch and half wide, smooth; the *radical* ones petiolate, pinnate, with the lower segments oblong, and the terminal one large, orbicular, ovate, or oval, repand-dentate, the *stem-leaves* pinnatifid at base, on short petioles; the *upper* and *branch leaves* obovate, and oval, narrowed at base, sessile, deeply and coarsely sinuate-dentate. *Pedicels* 1 fourth of an inch long. *Petals* yellow. *Siliques* about 3 fourths of an inch long, obliquely erect, somewhat 4 sided, acuminate with the tapering style.

Hab. Moist, low grounds; Brandywine: frequent. *Fl.* May. *Fr.* July.

Obs. This is supposed to be an introduced plant; but it is quite common along our streams. The radical leaves are sometimes gathered as a Cress, or Salad, in the spring,—though they are rather bitter and unpalatable. The B. *præcox*, a species nearly allied to it, is cultivated in the gardens near Philadelphia, under the name of "*Scurvy-grass*"; but it is rarely to be met with in this County. There are no other species known in the U. States.

316. ARABIS. *L. Nutt. Gen.* 564.

[Etymology obscure; supposed to have been originally an *Arabian* genus.]

Calyx erect. *Petals* unguiculate; border spreading, entire, obovate, or oblong. *Filaments* without teeth. *Silique* linear, crowned with the subsessile stigmas; valves flattish, nerved, or veined. *Seeds* in a single series, oval, or orbicular, compressed, often margined; *cotyledons* accumbent.

1. A. HIRSUTA? *Scop.* Hirsutely pubescent; leaves mostly all dentate; radical ones ovate-oblong, or oval, petiolate, cauline ones ovate, or lanceolate, sessile, amplexicaul, often sagittate; siliques numerous, straight, erect. *Beck, Bot. p.* 29.
A. sagittata. *Torr. Comp. p.* 250. *Also? DC. Prodr.* 1. *p.* 143. *Lindl. Ency. p.* 540. *Beck, l. c. Eat. Man. p.* 24.
Turritis hirsuta? *Willd. Sp.* 3. *p.* 543. *Pers. Syn.* 2. *p.* 205. *Muhl. Catal. p.* 61.
T. ovata. *Pursh, Am.* 2. *p.* 438.

HIRSUTE ARABIS.

Root perennial? (biennial, *Willd. DC.* &c.). *Stem* 6 to 12 or 15 inches high, often branched at base, or several from the root, striate, hairy, hairs simple and branched. *Radical leaves* half an inch to an inch long, and 1 third of an inch to half an inch wide, varying from roundish-ovate to oval and obovate-oblong, crenate-dentate, sometimes incised, abruptly contracted to a flat *petiole* half an inch to an inch in length; *stem-leaves* 3 fourths of an inch to 2 inches long, and 1 third to 3 fourths of an inch wide, ovate and ovate-lanceolate, rather acute, serrate-dentate, sessile, sagittate-cordate at base, and semiamplexicaul. *Raceme* 2 to 6 inches long; *pedicels* about half an inch long. *Petals* ochroleucous, obovate-oblong, twice as long as the calyx. *Siliques* 1 to near 3 inches long, linear, slender, rather erect; valves veined, often (but not constantly) with a keel-like central nerve, yellowish green, smooth and shining; style rather short, clavate. *Seeds* compressed, oblong, margined at and near the apex, reddish brown.

Hab. Brooke's Mill; Black Rock: not very common. *Fl.* April-May. *Fr.* June-July.

Obs. Our plant differs considerably from my European specimens of A. *hirsuta*,—the radical leaves being more abruptly narrowed at base, the racemes more loose, and the siliques not so strictly erect. It is, however, a variable species; and may perhaps be allowed, with propriety, to comprise all the varieties indicated by the synonyms quoted above. Collected near Brooke's Mill, in 1828, by Mr. JOSHUA HOOPES; and subsequently at Black Rock, by D. TOWNSEND, Esq.

2. A. LÆVIGATA, *DC.* Smooth and glaucous; radical leaves obovate, and oblong, dentate, sub-petiolate; stem-leaves lance-linear, rather obtuse, sessile, amplexicaul, the upper ones entire; pedicels about as long as the calyx, smooth, erect; siliques numerous, long, linear, nearly straight, erect, or spreading. *Beck, Bot. p.* 30.
Turritis lævigata. *Willd. Sp.* 3. *p.* 543. *Pers. Syn.* 2. *p.* 205. *Muhl. Catal. p.* 61. *Pursh, Am.* 2. *p.* 438. *Nutt. Gen.* 2. *p.* 71. *Bart. Phil.* 2. *p.* 57.

SMOOTH ARABIS.

Root perennial, *Muhl. Torr. Beck*, biennial, *Willd. Pursh, DC.* somewhat fusiform, with coarse fibrous branches, often oblique, or nearly horizontal, whitish.

Stem 1 to 2 feet high, rather stout, terete, striate, smooth and glaucous, somewhat branched at summit. *Radical leaves* 3 fourths of an inch to near 2 inches long, and 1 third to 3 fourths of an inch wide, often purplish, obovate, or oblong, obtuse, serrate-dentate, sparingly ciliate, and the upper surface sprinkled with short appressed hairs, subsessile, or tapering to a broad petiole; *stem-leaves* 2 to 4 or 5 inches long, and 1 third of an inch to an inch wide, sessile, sagittate-auriculate, very smooth, thin and membranaceous, pale green and glaucous, the lower ones remotely serrate, or repand-denticulate, the upper ones entire, or obscurely repand. *Racemes* 3 or 4 to 8 or 10 inches long; *pedicels* 1 fourth to 1 third of an inch long, erect. *Petals* ochroleucous, oblanceolate, obtuse, scarcely longer than the calyx. *Siliques* an inch and half to 2 and a half inches long, (3 to 4 inches, *Bart.*) linear, slender, often somewhat recurved, or spreading; valves flat, veined, rarely nerved; style short. *Seeds* compressed, roundish-ovate, conspicuously margined, reddish brown.

Hab. Low grounds, along Brandywine: frequent. *Fl.* April-May. *Fr.* June-July.

Obs. Collected by D. Townsend Esq. in 1828. Unquestionably distinct from the following,—though apparently doubted by Mr. *Nuttall.*

3. A. Canadensis, *L.* Radical leaves obovate-oblong, petiolate; stem-leaves oblong-lanceolate, sub-acuminate, denticulate, sessile; pedicels 3 times as long as the calyx, hairy, finally reflexed; siliques subfalcate, pendulous. *Beck, Bot. p.* 30.

A. falcata. *Mx. Am.* 2. *p.* 31. *Pursh, Am.* 2. *p.* 437. *Bart. Phil.* 2. *p.* 56. *Bigel. Bost. p.* 251. *Florul. Cestr. p.* 74.

Canadian Arabis. *Vulgò*—Sickle-pod. Turkey-pod.

Root perennial? *Stem* 2 to 3 feet high, terete, smooth, or often sparsely hirsute at the base, frequently purple, simple, sometimes with several axillary branches near the summit. *Radical leaves* 1 to 2 or 3 inches long, obovate, or oblong, narrowed to a petiole at base, often hirsute, dying early, and disappearing; *stem-leaves* 1 to 3 inches long, and 1 fourth to 3 fourths of an inch wide, tapering at each end, sessile, or subsessile, remotely denticulate, roughish-pubescent and ciliate with short hairs. *Raceme* 3 or 4 to 8 or 10 inches long, simple (when there are branches, a raceme terminating each branch); *pedicels* about half an inch long, somewhat hairy, spreading when in flower, reflexed in the fruit. *Calyx* hairy. *Petals* white, oblong-lanceolate, one half longer than the calyx. *Siliques* 2 to 3 inches long (3 to 5 inches, *Ell.*) and about 2 lines wide, pendulous, recurved, linear, acuminate, veined, mostly ancipital, or the valves with a keel-like nerve. *Seeds* compressed, ovate, roughish-punctate, reddish brown, with a broad cellular membranaceous margin, notched at the base, which is towards the apex of the silique.

Hab. Hilly woodlands: frequent. *Fl.* June. *Fr.* August.

Obs. Three or four other species, as the genus is now constituted, have been found in the U. States.

317. CARDAMINE. *L. Nutt. Gen.* 558.

[Greek, *Kardia*, the heart, and *damao*, to fortify; from its supposed virtues.]

Calyx closed, or somewhat spreading, equal at base. *Petals* unguiculate; border entire, *Filaments* without teeth. *Silique* linear, compressed; valves flat, nerveless, mostly separating elastically; style short. *Seeds* in a single series, not margined; *cotyledons* accumbent; *funiculus* slender.

1. C. RHOMBOIDEA, *DC.* Root tuberous; stem erect, sub-simple; radical leaves cordate-orbicular, or oval, on long petioles, lower stem-leaves rhomboid-ovate, sinuate-dentate, on short petioles, upper ones lance-oblong, sessile; petals large. *Beck, Bot. p.* 30.

C. rotundifolia. *Hook. Am.* 1. *p.* 44. Not of *Mx. Pursh, DC. &c.*

Arabis rhomboidea. *Pers. Syn.* 2. *p.* 204. *Pursh, Am.* 2. *p.* 437. *Nutt. Gen.* 2. *p.* 70. *Bart. Phil.* 2. *p.* 57. *Ell. Sk.* 2. *p.* 149. *Bigel. Bost. p.* 252. *Florul. Cestr. p.* 74.

A. bulbosa. *Muhl. Catal. p.* 61.

Also, A. tuberosa. *Pers. l. c.*

RHOMBOID CARDAMINE. *Vulgò*—Spring Cress.

Plant smooth. *Root* perennial, producing white tubers, mostly in small clusters, warmly acrid. *Stem* 9 to 18 inches high, erect, or slightly decumbent at base, simple, or sparingly branched above, angular and striate. *Radical leaves* 3 fourths of an inch to an inch and half long, generally rather oval, entire, or obtusely repand, often cordate at base, *petioles* 2 to 4 or 6 inches long, proceeding from the tubers; *lower stem-leaves* 1 to 3 inches long, and 3 fourths of an inch to an inch and half wide, ovate-oblong, or obscurely rhomboid, obtuse, remotely and obtusely sinuate-dentate, sometimes almost hastate-lobed at base, *petioles* gradually shorter as they ascend; *upper leaves* ovate-lanceolate, and lance-oblong, rather acute, with a few coarse teeth, sometimes entire, sessile. *Racemes* 2 to 4 or 5 inches long; *pedicels* half an inch to near an inch long, spreading. *Sepals* with a white margin. *Petals* white, obovate-cuneate, 3 to 4 times as long as the calyx. *Siliques* about an inch long, spreading, sublinear, acuminate.

Hab. Springs, and swampy rivulets: frequent. *Fl.* April. *Fr.* May.

2. C. ROTUNDIFOLIA, *Mx.* Root fibrous; stem decumbent, branching; branches slender, flaccid, elongating; leaves orbicular, or broad-oval, obtusely repand-dentate, all petiolate; petals middle sized. *Beck, Bot. p.* 30. Not of *Bigel.*

ROUND-LEAVED CARDAMINE.

Plant smooth. *Root* perennial, of numerous long slender fibres. *Stem* 6 to 12 or 15 inches long, striate, decumbent, with numerous axillary branches; branches weak, spreading, becoming procumbent, and often radicating. *Leaves* 1 third of an inch to 2 inches long, and nearly as wide as long, all nearly conformable, the lower ones large, often with a pair of minute lobes on the petiole, the upper ones gradually smaller to the extremities of the branches; lower *petioles* 1 to 2 inches long, dilated, nerved, gradually shorter as they ascend. *Racemes* 1 to 2 or 3 inches long, sometimes proliferous at the summit; *pedicels* half an inch to 3 quarters in length, spreading. *Petals* white, or ochroleucous, cuneate-obovate, about twice as long as the calyx. *Siliques* half an inch to 3 quarters in length, spreading, linear, with a slender acumination.

Hab. Shaded springs and rivulets; Brandywine: not common. *Fl.* May. *Fr.* June.

Obs. This species is comparatively rare; but it has been found in several places within the County, since my Catalogue was published. Though long confounded with the preceding, it is now admitted, I believe, by all who have seen good specimens, to be quite distinct. Prof. *Hooker* has published excellent descriptions of both, accompanied with plates, in the Botanical Miscellany. The C. *rotundifolia, Bigel.* is believed to be the C. *bellidifolia, L.*

3. C. HIRSUTA, *L.* Leaves pseudo-pinnate; leaflets of the radical leaves petiolate, mostly rounded, of the cauline ones subpetiolate, lance-oblong, dentate, or entire; petals small, cuneate-oblong; siliques erect. *Beck, Bot. p.* 31.

C. pennsylvanica. *Pursh, Am.* 2. *p.*440. *Nutt. Gen.* 2. *p.* 67. *Bart. Phil.* 2. *p.* 218. *Ell. Sk.* 2. *p.* 144. *Bigel. Bost. p.* 253. *Florul. Cestr. p.* 75. Also, *Willd. Sp.* 3. *p.* 486. *Pers. Syn.* 2. *p.* 196. *Muhl. Catal. p.* 60. *DC. Prodr.* 1. *p.* 151. *Torr. Comp. p.* 249. *Lindl. Ency. p.* 542. *Eat. Man. p.* 67.

C. virginica. *Mx. Am.* 2. *p.* 29. Also, *Willd? Pursh, &c.* not of *L.* (*vide DC. Syst.* 2. *p.* 259.).

Also? C. sylvatica, *and* C. parviflora. *DC. Prodr.* 1. *p.* 152.

HIRSUTE CARDAMINE. *Vulgò*—Water Cress.

Root annual? fibrous. *Stem* 3 or 4 to 12 or 18 inches high, erect, often flexuose, striate-angled, more or less hairy, sometimes nearly glabrous, branching, and often several from the same root. *Leaves* 1 to 3 or 4 inches long, petiolate, pinnately dissected, mostly smooth; the *leaflets* of the *radical* leaves nearly orbicular, dentate-angular, or sparingly and obscurely denticulate, shortly mucronate at apex, narrowed to a short slender petiole at base; *leaflets* of the *stem-leaves* varying from oval to lance-oblong and linear, dentate, or entire, narrowed at base, subsessile, the terminal leaflet or lobe larger, obovate, sinuate-dentate, or trifid. *Racemes* 2 to 4 or 6 inches long; *pedicels* 1 eighth to near half an inch long, rather erect. *Petals* white, narrow, nearly twice as long as the calyx, but rather inconspicuous. *Siliques* about an inch long, erect, linear, slender, compressed. *Seeds* compressed, oval, with one groove on each side, appearing as if doubled (cotyledons accumbent), pale reddish brown.

Hab. Springs, and along swampy rivulets: frequent. *Fl.* May. *Fr.* June.

Obs. This is a variable plant, both in size and appearance, and with us is generally much smoother than in my European specimens: But I incline strongly to the opinion of Prof. *Hooker*, and Dr. *Beck*, that the Synonyms, quoted above, all refer to mere *varieties* of this species. The C. *virginica* seems to be a slender starved variety, commonly growing in dry upland situations. The leaves of young luxuriant specimens afford a pleasant Cress, in the spring of the year. Four or five additional species are enumerated in the U. States.

318. DENTARIA. *L. Nutt. Gen.* 557.

[Latin, *Dens, dentis*, a tooth; from the tooth-like tubers of the root.]

Calyx equal at base, erect. *Petals* unguiculate, the border obovate. *Filaments* without teeth. *Silique* compressed, lanceolate, with a long acumination; valves flat, nerveless, often opening elastically. *Seeds* in a single series, ovate, not margined; *funiculus* dilated; *cotyledons* accumbent, thickish.

1. D. LACINIATA, *Muhl.* Leaves in threes, subverticillate, deeply 3-parted, on short petioles; segments lance-linear, coarsely incised-serrate, or laciniate. *Beck, Bot. p.* 28. Icon, *Bart. Am.* 3. *tab.* 72. D. concatenata, *Mx. Am.* 2. *p.* 30. *Pers. Syn.* 2. *p.* 194.

LACINIATE DENTARIA. *Vulgò*—Tooth-wort.

Root (rhizoma?) perennial, fibrous and moniliform, or bearing horizontal whitish ovoid-oblong tubers (usually 2 or 3, sometimes more) half an inch to an inch in length, tapering at each end and connected by coarse fibres. *Stem* 6 to 12

inches high, simple, striate, more or less pubescent. *Leaves* usually 3, near the summit of the stem, each mostly 3-parted to the base; *segments* an inch and half to 3 or 4 inches long, and 1 fourth to 3 fourths of an inch wide, lance-linear, acute or often obtuse, mucronate, mostly laciniate-serrate, smoothish, or slightly pubescent; *petioles* half an inch to an inch and half long; sometimes, but rarely, a laciniate *radical leaf* on a long petiole. *Raceme* terminal, loose, at first corymbose, finally 2 or 3 inches long; *pedicels* half an inch to an inch long, pubescent. *Sepals* linear-oblong, 1 third of an inch in length, with a white margin. *Petals* pale rose-color, or sometimes nearly white, about 3 fourths of an inch long, cuneate-obovate, attenuated below. *Siliques* about an inch long, lance-linear, tapering at apex, and pointed with the style which is 1 fourth to near half an inch long; *septum* thick at the margins. *Seeds* ovate-oblong, obtuse, reddish brown; *funiculus* flat, dilated.

Hab. Rich woodlands: frequent. *Fl.* April. *Fr.* June.

Obs. The tubers of this are warmly acrid. Five or six additional species are enumerated in the U. States.

319. SISYMBRIUM. *All. Nutt. Gen.* 560.

[An ancient Greek name; applied to this genus.]

Calyx equal at base, closed, or spreading. *Petals* unguiculate, entire. *Filaments* without teeth. *Silique* subterete, or angular; valves concave; style very short. *Seeds* in a single series, ovate, or oblong; *cotyledons* incumbent (sometimes obliquely), flat.

1. S. OFFICINALE, *Scop.* Lower leaves runcinate, upper ones subhastate; racemes spikeform, slender and virgate; siliques erect, subulate, subsessile, appressed to the rachis. *Beck, Bot. p.* 33. Erysimum officinale. *Willd. Sp.* 3. *p.* 509. *Mx. Am.* 2. *p.* 31. *Pers. Syn.* 2. *p.* 199. *Muhl. Catal. p.* 61. *Pursh, Am.* 2. *p.* 436. *Nutt. Gen.* 2. *p.* 68. *Bart. Phil.* 2. *p.* 55. *Ell. Sk.* 2. *p.* 148. *Bigel. Bost. p.* 253. *Florul. Cestr. p.* 74.

OFFICINAL SISYMBRIUM. *Vulgò*—Hedge Mustard. *Gallicè*–Herbe au Chantre. *Germ.*–Der Hederich. *Hisp.*–Jaramágo.

Root annual. *Stem* 1 to 3 feet high, terete, pilose with acute and rather retrorse hairs, branched, branches spreading. *Leaves* more or less pilose, especially on the under surface, petiolate; *lower leaves* 3 or 4 to 6 or 8 inches long, and 2 to 4 inches wide, somewhat runcinately pinnatifid; *upper leaves* smaller, sub-lanceolate, sinuate-dentate, mostly hastate-lobed at base; *petioles* half an inch to 1 or 2 inches long, somewhat margined. *Racemes* elongating, 6 to 12 or 15 inches in length, slender; *pedicels* clavate, thick, and very short (scarcely a line in length), erect. *Petals* greenish yellow, small, longer than the calyx, cuneate-oblong. *Siliques* half an inch to 3 quarters in length, smooth, terete-subulate, or somewhat nerved and angular, tapering at apex, closely appressed to the rachis.

Hab. Cultivated grounds, lanes, & roadsides; common. *Fl.* May-Aug. *Fr.* Aug-Oct.

Obs. A naturalized foreigner; and somewhat troublesome as a *weed.* It was formerly in some repute, as a remedy for hoarseness, coughs, &c,—but was probably much overrated, and is now neglected.

2. S. CANESCENS ? *Nutt.* var. *major ? Hook.* Subcanescent and glaucous; leaves bipinnatifid, segments ovate-oblong, and lance-linear, obtuse, dentate, or entire; racemes elongated, loose, petals as long as the

calyx; pedicels slender, spreading, longer than the siliques. *Hook. Am.* 1. *p.* 62.

S. Sophia? *Muhl. Catal. p.* 61. *Pursh, Am.* 2. *p.* 440. *Torr. Comp. p.* 251. *Beck, Bot. p.* 33. Not of *Linn. DC.* &c.

HOARY SISYMBRIUM.

Plant pale green and somewhat glaucous, or canescent. *Root* annual, terete, tapering, with a few coarse branches. *Stem* 1 to 2 feet high, subterete, smoothish very pale green, or whitish, more or less branched, often much branched from near the base. *Leaves* 1 to 3 or 4 inches long, bipinnately and rather finely dissected, smoothish, or sparingly pilose, pale green, or glaucous; *segments* of the lower leaves ovate-oblong and obovate, mostly obtuse, incised-dentate,—of the upper leaves lance-linear. incised-serrate, or entire (the uppermost leaves often simply and deeply pinnatifid, with narrow sublinear entire segments half an inch to 3 quarters in length); *petioles* short, dilated, nerved. *Racemes* slender, 4 to 12 or 15 inches long; *pedicels* half an inch to an inch long, slender, spreading. *Petals* pale yellow, or ochroleucous, obovate-oblong, small, about as long as the calyx. *Siliques* about half as long as the pedicels, linear-oblong, abruptly acute, rather erect, or ascending, often slightly curved, smooth; valves with a central keel-like nerve. *Seeds* ovate-oblong, striate-punctate, reddish brown.

Hab. Banks of the Schuylkill; Black Rock: rare. *Fl.* May. *Fr.* June.

Obs. This has been found only in the above locality, in Chester County,—where it was collected by Mr. JOHN MARSHALL, in 1829. I collected specimens of it on the banks of the Potomac, near Georgetown, in 1820; and Mr. *Schweinitz* pronounced them to be a variety of S. *canescens*. Our plant, however, is much less pubescent and hoary than the true S. *canescens* of the Southern States,—and the siliques are longer. It is probably the one referred to by Mr. *Elliott*, in his note on S. *canescens;* and I have supposed it may be the *var. major*, of Prof. *Hooker*.

3. S. ARABIDOIDES, *Hook.* Radical leaves lyrate-pinnatifid, subhirsute, stem leaves linear, entire, smoothish; siliques erect, twice as long as the pedicels. *Hook. Am.* 1. *p.* 63. ICON, *tab.* 21.

Arabis lyrata. *L. and the Authors quoted in this work.*

Also? A. hispida. *Muhl. Catal. p.* 61. Not of *Linn.*

ARABIS-LIKE SISYMBRIUM.

Root perennial, *Nutt.* biennial, *Torr. Beck*, annual, *Willd. Hook.* somewhat fusiform. *Stem* 6 to 12 inches high, branched, often numerous from the same root, flexuose, striate, hispid at base, smooth above, and somewhat glaucous. *Radical leaves* numerous and tufted, 1 to 2 or 3 inches long, and 1 fourth to half an inch wide, lyrate-pinnatifid, hirsutely pilose and ciliate, petiolate; *lower stem-leaves* oblong, tapering at base to a petiole, pinnatifid and sinuate-dentate, more or less pilose; *upper ones* half an inch to an inch and half long, and 1 to 2 lines wide, sublinear, narrowed at base, sessile, obtuse, entire, or remotely denticulate, smooth, or sparingly pilose. *Racemes* 2 to 4 or 5 inches long, loose; *pedicels* 1 third to half an inch long, spreading. *Petals* white, or ochroleucous, rarely tinged with purple, obovate-oblong, spreading, conspicuous, more than twice as long as the calyx. *Siliques* about an inch long, narrow, linear, rather erect, pointed with a very short style; valves with a slender keel-like nerve. *Seeds* oval, reddish brown; cotyledons (obliquely?) incumbent.

Hab. Dry, rocky hills; Serpentine ridge: frequent. *Fl.* April-May. *Fr.* May-June.

Obs This is abundant on the Serpentine rock; but not very common elsewhere. The pubescence is generally long and simple; but I have seen some specimens

in which it was short and branched (2 or 3-forked), especially on the disk of the leaves. Authors differ much with respect to the duration of the root. I incline to the opinion of Mr. *Nuttall*, that it is perennial.

4. S. THALIANUM, *Hook.* Leaves obscurely dentate, pilose; radical ones numerous, elliptic-oblong, sub-petiolate, cauline ones lanceolate, sessile; siliques ascending, rather longer than the pedicels. *Hook. Brit. Flora, ed.* 2. *p.* 303.

Arabis Thaliana. *L. and the Authors quoted in this work.*

THALIAN SISYMBRIUM. *Vulgò*—Wall Cress. Mouse-ear Cress.

Gallicè—Arabette des Dames. *Germanicè*—Das Gaensekraut.

Root annual. *Stem* 3 or 4 to 12 inches high, often several from the same root, striate, hirsute below, and often purple at base, smoothish above, branched, branches axillary, slender and flaccid. *Radical leaves* numerous, spreading on the ground in a circle, 1 to 2 inches long, and 1 fourth to half an inch wide, hirsutely scabrous, tapering to a flat petiole at base; *stem-leaves* distant, smaller, lanceolate and lance-linear, hairy and roughish, denticulate, ciliate, narrowed at base, sessile. *Racemes* 1 to 3 or 4 inches long, loose; *pedicels* about half an inch long, spreading. *Petals* white, oblong, erect, obtuse, inconspicuous, nearly twice as long as the calyx. *Siliques* about 3 fourths of an inch long, narrow, linear, ascending, pointed with a very short style; valves with a very slender central nerve.

Hab. Old fields; along Brandywine: frequent. *Fl.* April. *Fr.* June.

Obs. This is probably an introduced plant; but is extensively naturalized. Three or four additional species are enumerated in the U. States.

320. BRASSICA. *L. DC. Syst.* 2. *p.* 582.

[Supposed to be from *Bresic;* the Celtic name for the Cabbage.]

Calyx equal at base, erect. *Petals* obovate. *Filaments* entire. *Silique* subterete; valves concave, or slightly keeled with a central nerve; style short, obtuse. *Seeds* in a single series, subglobose; *cotyledons* incumbent, conduplicate.

1. B. OLERACEA, L. *Leaves fleshy, repand, or lobed, glaucous, always glabrous.* DC. Prodr. 1. p. 213.

OLERACEOUS BRASSICA. Vulgò—*Cabbage.*

Gallicè—*Chou potager.* Germanicè—*Der Kohl.* Hispanicè—*Berza.*

The following Sub-species, *or* Varieties, *are more or less cultivated, here*—

Sub-species C. BULLATA, DC. *Stem somewhat elongated; young leaves subcapitate, finally expanding, bullate-rugose, or curled; racemes paniculate.*

Vulgò—*Savoy Cabbage. Curled Cabbage. Brussels Sprouts.*

Gall.—*Chou de Savoie.* Germ.–*Savoyer Kohl.* Hisp.–*Berza crespa.*

Sub-species D. CAPITATA, DC. *Stem short; leaves concave, not bullate, packed in a dense head before flowering; racemes paniculate.*

Vulgò—*Head Cabbage. Sugar-loaf Cabbage. York Cabbage.* Gall.—*Chou en tête.* Germ.—*Kopfkohl.* Hisp.—*Berza repolluda.*

Sub-species F. BOTRYTIS, DC. *Peduncles of the racemes corymbose, short fleshy and conglomerate before flowering; flowers often abortive.*

Var. a. cauliflora. *Stem low; leaves oblong, bluish glaucous; heads thick, compact, terminal.*

Vulgò—*Cauliflower.*

Gall.—*Chou fleur.* Germ.—*Blumenkohl.* Hisp.—*Berza florida.*

Var. b. asparagoides. *Stem taller; leaves elongated, bluish glaucous; heads sub-ramose; branches fleshy at apex, or bearing clusters of abortive flower-buds.*

Vulgò—*Broccoli.*

Biennial. Root *coarsely fibrous.* Stem 9 *to* 18 *inches high, thick, fleshy, terete, marked with cicatrices of fallen leaves, mostly simple,—branching or elongating, the second year, from the summit, or head; branches erect,* 2 *to* 3 *feet long.* Leaves *large, suborbicular, oblong, or obovate, repand, sometimes lobed, those at the summit of the stem densely imbricated in a head.* Racemes *long, loose;* pedicels *about an inch long.* Petals *greenish yellow, obovate, unguiculate, about twice as long as the calyx.* Siliques *as long, or longer than the pedicels, somewhat torulose.*

Hab. *Kitchen gardens: common.* Fl. *May—June.* Fr. *July.*

Obs. *The varieties of* Cabbage, *properly so called, are extensively cultivated for the table; but the* Cauliflower *and* Broccoli *are not often to be met with, here,—as they require more care, to ensure success, than farmers and country gardeners, generally, are disposed to bestow upon them.*

2. B. CAMPESTRIS, L. *Leaves somewhat fleshy, glaucous; the lower ones lyrate, dentate, sub-hispid and ciliate, those above cordate, acuminate, amplexicaul.* DC. Prodr. 1. p. 214.

FIELD BRASSICA.

Sub-species C. NAPO-BRASSICA, DC. *Root tumid, turnep-shaped.*

Var. a. communis. *Root white, or purplish.*

Vulgò—*Turnep-rooted Cabbage.*

Gallicè—*Chou-navet.* Germ.—*Die Kohl-ruebe.* Hisp.—*Nabiza.*

Var. b. Rutabaga. *Root yellowish, subglobose.*

Vulgò—*Rutabaga. Swedish Turnep. Yellow Turnep.*

Gallicè—*Chou de Suède. Navet jaune.*

Biennial. Root *thick, turnep-shaped, fleshy.* Stem 12 *to* 18 *inches high, terete, smooth, glaucous, branched above.* Lower leaves *hispid,* upper ones *glabrous.* Racemes *loose.* Petals *yellow.* Siliques *obsoletely quadrangular,*

Hab. *Gardens, and Lots: not common.* Fl. *June.* Fr. *July—August.*

Obs. *A few years since, both varieties were frequently to be seen under cultivation; but our farmers are not partial to* root crops,—*and the culture of these is now generally neglected.*

3. B. Rapa, L. *Radical leaves lyrate, hirsutely scabrous, not glaucous, lower stem-leaves incised, upper ones entire, smooth.* DC Prodr. 1. p. 214.

Sub-species A. depressa, DC. *Root tumid below the neck, orbicular, or depressed-globose, abruptly contracted to a slender tapering radicle beneath.* DC. l. c.

Vulgò—*Turnep. Common Turnep.*

Gallicè—*Navet. Grosse Rave.* Germ.—*Die Ruebe.* Hisp.—*Naba.*

Biennial. Root *fleshy, white (rarely yellow), depressed, orbicular, horizontal diameter 3 to 6 inches, vertical diameter about 2 inches.* Stem *2 to 4 feet high, branched, smooth, or hirsute at base.* Radical leaves *6 to 10 or 12 inches long, and 2 or 3 to 5 inches wide, scabrous, deep green, petiolate, lyrate, the terminal lobe rounded;* stem-leaves *smaller, the upper ones lance-oblong, smooth, entire, sessile, auriculate and amplexicaul.* Racemes *loose, corymbose-paniculate.* Petals *pale greenish yellow.* Siliques *about an inch long.* Seeds *globose, small, reddish brown.*

Hab. *Gardens, and fields: common.* Fl. *May.* Fr. *June—July.*

Obs. *Generally cultivated for the table. The* seeds *are usually sown about the last of July, and the roots are full grown in November. There are no native species in the U. States.*

321. SINAPIS. *Tournef.* *DC. Syst.* 2. *p.* 607.

[An ancient name, of obscure derivation.]

Calyx equal at base, spreading. *Petals* obovate. *Filaments* entire. *Silique* subterete; valves concave, or nerved, smooth, or hispid; style short and subulate, or ensiform. *Seeds* in a single series, subglobose; *cotyledons* incumbent, conduplicate.

1. S. nigra, *L.* Lower leaves lyrate, upper ones lanceolate; siliques somewhat 4-angled, smooth, appressed to the rachis. *Beck, Bot. p.* 33.

Black Sinapis. *Vulgò*—Mustard. Black Mustard.

Gallicè—Moutarde noir. *Germanicè*—Der Senf. *Hisp.*—Mostazo.

Root annual. *Stem* 3 to 6 feet high, terete, smooth, much branched. *Leaves* petiolate, variously lobed, and toothed; *radical* ones scabrous, *cauline* ones smooth, the upper ones narrow, pendulous, serrate, or entire. *Racemes* slender, 3 to 6 or 8 inches long; *pedicels* 1 fourth to 1 third of an inch long, erect. *Sepals* linear-oblong, yellowish. *Petals* greenish yellow, obovate, unguiculate. *Anthers* sagittate. *Siliques* half an inch to 3 quarters in length, 4-angled, slightly torulose, smooth, beaked with the slender 4-sided style. *Seeds* numerous, minute, globose, dark brown.

Hab. Fields, fence-rows, and waste places: frequent. *Fl.* June—July. *Fr.* Aug.

Obs. This is naturalized to a considerable extent, about old settlements; and is sometimes, though rarely, cultivated. The highly acrid *seeds* afford a valuable rubefacient to the Physician,—and a stimulating condiment well known, and generally used, at table.

2. S. alba, L. *Leaves lyrate, smoothish; siliques hispid, spreading, scarcely as long as the ensiform beak.* Beck, Bot. p. 33.

White Sinapis. Vulgò—*White Mustard.*

Root *annual*. Stem 2 *to* 4 *or* 5 *feet high, thickish, striate, branched, sparsely and retrorsely hirsute.* Leaves *petiolate, lyrately pseudo-pinnate, dentate, the terminal segment large, 3-lobed.* Racemes 3 *to* 6 *inches long;* pedicels *about half an inch long, spreading.* Petals *yellow, obovate, rather large.* Siliques *hispid, spreading, about 4-seeded, terminating in a long compressed ensiform beak.* Seeds *large, subglobose, pale brown.*

Hab. *Gardens: not very common.* Fl. *June.* Fr. *August.*

Obs. *This is occasionally cultivated for its* seeds,—*which are used as a condiment; and, in latter times, have been somewhat celebrated as a remedy for nervous complaints, dyspepsia, &c. They are administered whole. There are no native species in the U. States.*

b. *Silique indehiscent, lomentaceous.*

322. RAPHANUS. *L. DC. Syst. 2. p. 662.*

[Greek, *Ra*, quickly, and *phainomai*, to appear; from its speedy germination.]

Calyx erect, somewhat gibbous or bi-saccate at base. *Petals* unguiculate; border obovate. *Filaments* without teeth. *Silique* terete, acuminate, valveless, suberose, transversely many-celled, or dividing into joints. *Seeds* in a single series, globose, pendulous; *cotyledons* thick, incumbent, conduplicate.

1. R. SATIVUS, L. *Lower leaves lyrate, petiolate; siliques terete, torose, acuminate, scarcely longer than the pedicels.* DC. Prodr. 1. p. 228.

CULTIVATED RAPHANUS. *Vulgò—Radish. Garden Radish.* Gallicè—*Radis. Raifort.* Germ.—*Der Rettig.* Hisp.—*Rábano.*

Sub-species A. RADICULA, DC. *Root more or less fleshy, tender, white, or red.*

Var. a. rotunda. *Root subglobose.* Vulgò—*Turnep Radish.*

Var. b. oblonga. *Root oblong, terete.* Vulgò—*Common Radish.*

Sub-species B. NIGER, DC. *Root fleshy, solid, hardish, more or less acrid.*

Var. a. vulgaris. (*also*, b. rotundus). *Root black externally, white within, oblong, or subglobose.*

Vulgò—*Black Turnep Radish. Spanish Radish.*

Annual. Root *fleshy, oblong, or roundish, often large.* Stem 1 *to* 2 *or* 3 *feet high, sparingly hispid, branched.* Leaves *hispid;* radical *ones lyrately pseudo-pinnate, the terminal segments large, rounded, often emarginate;* upper *ones ovate-oblong, serrate, somewhat hastate-lobed at base, subsessile.* Racemes *subcorymbose, elongating;* pedicels *about an inch long.* Sepals *lance-linear, erect, sparingly hispid,* 2 *of them gibbous at base.* Petals *nearly twice as long as the calyx;* border *purple* (*sometimes white*), *obovate, spreading;* claw *greenish white.* Siliques *torose.* Seeds *few, large.*

Hab. *Gardens, &c. common.* Fl. *June—September.* Fr. *July—October.*

Obs. *Very generally cultivated for the table,—especially the sub-species* A. *There are no native species in the U. States.*

CLASS XV. MONADELPHIA.

Order 1. Triandria.

[Sisyrinchium. *Triandria Monogynia.*]

Order 2. Pentandria.

[Lobelia. *Pentandria Monogynia.*]

Order 4. Decandria.

323. GERANIUM. *L. Nutt. Gen.* 574.
[Greek, *Geranos*, a crane; the beaked fruit resembling a Crane's bill.]

Sepals 5, equal. *Petals* 5, equal. *Stamens* slightly monadelphous; the alternate ones longer, with nectariferous glands at base. *Carpels* 5; *styles* cohering round the elongated axis, finally indurated, smooth internally, separating elastically and recurving from the base to the apex.

Herbaceous, or rarely suffruticose: leaves mostly opposite, palmate-lobed; peduncles axillary, 1 or 2-flowered. *Nat. Ord.* 122. *Lindl.* GERANIACEÆ.

1. G. MACULATUM, *L.* Stem erect, somewhat angular, dichotomous above; leaves 3 to 5-parted, incised-dentate, the radical ones on long petioles, the upper ones opposite, on short petioles, or subsessile; petals entire, twice as long as the calyx; filaments scarcely ciliate at base. *Beck, Bot. p.* 67.

SPOTTED GERANIUM. *Vulgò*—Crow-foot. Spotted Crane's-bill.

Root perennial, tuberous. *Stem* 12 to 18 inches high, rather slender, clothed with retrorse or spreading hairs, simple below, di- or tri-chotomously branched at summit; branches with *stipules* at base. *Leaves* 2 to 3 inches long, hirsutely pubescent, palmate-lobed, lobes spreading, cuneate, incised-dentate, and often trifid at apex; *radical* leaves on *petioles* 3 to 6 or 9 inches long, with membranous *stipules* at base; *stem*-leaves opposite, at the base of the branches, on villose *petioles* 1 fourth of an inch to 2 or 3 inches long, the uppermost leaves often solitary and subsessile. *Peduncles* subcorymbose, 1 to 3 or 4 inches long, mostly 2-flowered, often a long dichotomal one in the lower bifurcations; *pedicels* half an inch to an inch and half long, in terminal unequal pairs, with small membranous lance-linear *bracts* at base. *Sepals* lance-ovate, conspicuously mucronate, 3 or 5-nerved, pilose. *Petals* purple, spreading, cuneate-obovate, 5-nerved, villose at base within. *Carpels* hirsute, indehiscent, each 1-seeded, the beak of cohering styles about an inch long, finally separating at base, and recurving outward and upward.

Hab. Woodlands, fence-rows, & meadows: common. *Fl.* May–June. *Fr.* June–July.

Obs. The *root* of this is astringent; and has been found useful in diarrhœa, hæmorrhage, &c.

2. G. CAROLINIANUM, *L.* Stem diffuse, di- or tri-chotomously branched; leaves deeply 5-parted, segments 2 or 3-parted, incised-dentate; petals emarginate, about as long as the calyx; carpels pilose. *Beck, Bot. p.* 68.

CAROLINIAN GERANIUM.

Root annual, somewhat fusiform, with a few coarse fibres. *Stem* 6 to 12 or 18 inches long, oblique, or decumbent, often several from the root, dichotomously

branching and diffuse, nerved, tumid at the joints, clothed with a spreading or retrorse villose pubescence; branches with *stipules* at base. *Leaves* about an inch long, and wider than long, reniform-orbicular in their outline, multifid, hirsute; *petioles* villose, the *radical* ones 2 to 6 inches long, with linear-lanceolate acuminate hairy *stipules* at base, those of the *stem-leaves* half an inch to 3 inches long. *Flowers* small, sub-fasciculate among the leaves at summit; *Peduncles* half an inch to an inch and half long, 2-flowered, usually a 1-flowered dichotomal one in the lower forks; *pedicels* 1 fourth to half an inch long; bracteate at base. *Sepals* lance-ovate, conspicuously mucronate, 3-nerved, hairy. *Petals* pale red, or whitish with pale red stripes, cuneate-oblong, emarginate, narrowed and ciliate at base, scarcely longer than the calyx. *Carpels* hairy, each 1-seeded (2 seeded, *Ell.*), the beak of cohering styles about 3 fourths of an inch long, hairy. *Seeds* oval, reticulately rugose, reddish brown.

Hab. Fields; along Brandywine: not common. *Fl.* May—June. *Fr.* July.

Obs. This is somewhat rare,—and has the appearance of a stranger, here. Three or four additional species are enumerated in the U. States.

324. OXALIS. *L. Nutt. Gen.* 420.

[Greek, *Oxys*, sharp, or sour; in allusion to the acid quality of the plant.]

Sepals 5, free, or united at base. *Petals* 5. *Stamens* monadelphous at base, the alternate ones shorter. *Styles* 5, capitate, or pencilform at apex. *Capsule* oblong, pentagonal, 5-celled, opening at the angles. *Seeds* covered with an elastic *arillus*.

Herbaceous: caulescent, or stemless; leaves alternate, mostly trifoliate; flowers subcymose on axillary peduncles, or subumbellate, or solitary, on scapes. *Nat. Ord.* 123. *Lindl.* OXALIDEÆ.

1. O. STRICTA, *L.* Caulescent; stem mostly erect, branched, pilose; stipules none; peduncles longer than the petioles, 3 to 10-flowered; petals entire. *Beck, Bot. p.* 70.
Also, O. corniculata. *Florul. Cestr. p.* 76. Not? of *Willd. Pursh, D C.* &c.

UPRIGHT OXALIS. *Vulgò*— Wood Sorrel.

Root perennial? (annual, *DC.*) creeping, or soboliferous. *Stem* 2 or 3 inches to near 2 feet high, hairy, mostly erect, branched, often spreading, or bushy, and sometimes nearly prostrate. *Leaves* trifoliate; *leaflets* 1 fourth of an inch to an inch long, and wider than long, obcordate, slightly ciliate, smoothish, sessile; *common petiole* 1 to 3 or 4 inches long, pilose, articulated at base, often nearly opposite, or 3 or 4 approximated on the stem, with long naked intervals. *Peduncles* 2 to 4 or 5 inches long, axillary, pilose, tumid at base, dichotomously branched at summit, in the larger specimens mostly with a central pedicel, the principal branches diverging horizontally and cymosely subdivided; branches and pedicels mostly *bracteate* at base. *Petals* yellow, obovate, entire, about twice as long as the calyx. *Styles* subcapitate, scarcely as long as the longest stamens, persistent. *Capsules* half an inch to near an inch long, and 1 to 2 or 3 lines in diameter, 5-angled, hairy, subacuminate. *Seeds* obovoid, striate, transversely rugose, reddish brown, emerging, at maturity, from the subcarnose bivalved *arillus*.

Hab. Fields, and woodlands: very common. *Fl.* May—Sept. *Fr.* July—Octo.

Obs. This plant, so well known for its sprightly acid flavor, varies exceedingly in size, and somewhat in habit,—being often of humble growth, diffuse, and occa-

sionally almost prostrate: but I can discover nothing in my specimens to warrant a *specific* distinction. If the O. *corniculata* be really distinct, I have not observed it, here.

2. O. VIOLACEA, *L.* Stemless; scapes subumbellate, 3 to 9-flowered, flowers nodding; sepals callous at apex. *Beck, Bot. p.* 69.

VIOLET OXALIS.

Root perennial, bulbous; bulb composed of ovate acuminate imbricated scales, —the outer ones membranaceous, 3-nerved, fringed with long curled hairs (these scales are apparently the dilated persistent bases of former petioles),—the inner ones thick, fleshy, and minutely ciliate. *Leaves* radical, trifoliate; *leaflets* about half an inch long, and wider than long, broadly cuneate-obcordate, sessile, punctate, smooth, often purplish; *petioles* 3 to 6 inches long, dilated membranaceous and 3-nerved at base. *Scapes* 4 to 6 or 8 inches long, slender, naked, subumbellate at summit, 2 or 3 to 6 or 9-flowered; *rays*, or *pedicels*, half an inch to an inch long (sometimes subdivided), with membranaceous involucre-like *bracts* at base. *Sepals* lance-oblong, thickened at apex, or tipt with a sub-cordate grooved orange-colored callus. *Petals* violet-purple, obovate, nearly 3 times as long as the calyx. *Filaments* ciliate. *Styles* hirsute with short spreading hairs, often as long or longer than the stamens (shorter, *Ell. Torr.*); *stigmas* capitate, 2-lobed. *Capsule* 5-angled and sulcate, or 5-lobed.

Hab. Woodlands; fence-rows &c frequent. *Fl.* May—June. *Fr.* July.

Obs. This pretty species often sends up a scape and produces flowers in the latter part of summer, after the leaves have all disappeared. Six or seven additional species have been enumerated in the U. States,—some of which, I suspect, are scarcely more than *varieties*. The O. *acetosella* (O. *americana*, *Bigel. in DC. Prodr.* 1. *p.* 700.) I have seen in abundance on Pokono Mountain, in this State; and it seems to be very much restricted to such regions.

Order 5. Polyandria.

a. *Calyx double, or with involucre-like Bracts at base.*

325. MALVA. *L. Nutt. Gen.* 578.
[An ancient Latin name, of obscure etymology.]

Calyx 5-cleft, mostly tribracteate at base; *bracts* oblong, or setaceous. *Carpels* numerous, arranged orbicularly, mostly 1-seeded.

Herbaceous, or shrubby: leaves alternate, stipular, undivided, or palmate-lobed; flowers axillary and terminal, more or less aggregated. *Nat. Ord.* 24. *Lindl.* MALVACEÆ.

1. M. SYLVESTRIS, *L.* Stem herbaceous, erect; leaves somewhat acutely 5 or 7-lobed; petals obcordate, 3 times as long as the calyx. *Beck, Bot. p.* 57.

WOODLAND, OR WILD MALVA. *Vulgò*—High Mallows.

Gallicè—Grande Mauve. *Germ.*—Die Waldmalve. *Hisp.*—Malva.

Plant hairy. *Root* perennial. *Stem* 2 to 3 or 4 feet high, somewhat branched. *Leaves* an inch and half to 3 inches long, and wider than long, 5 to 7-lobed, lobes rather acute, incised-crenate; *petioles* 1 to 3 or 4 inches long, very hairy, with 2 *stipules* at base. *Flowers* large, axillary, 3 or 4 together, subumbellate; *pedicels* half an inch to an inch long. *Calyx* with 3 oblong obtuse *bracts* at base. *Petals*

purple, veined, obcordate-oblong. *Carpels* arranged in a depressed umbilicate orb, laterally cuneate, reticulately rugose on the back. *Seed* roundish-reniform and cuneate, pale brown.

Hab. Fields, and waste places: not unfrequent. *Fl.* July—August. *Fr.* Sept.

Obs. This foreigner has escaped from the gardens, and is partially naturalized in many places.

2. M. ROTUNDIFOLIA, *L.* Stem herbaceous, prostrate; leaves cordate-orbicular, doubly crenate; petals cuneate-oblong, emarginate, twice the length of the calyx; pedicels of the fruit deflected. *Beck, Bot. p.* 57.

ROUND-LEAVED MALVA. *Vulgò*—Running Mallows. Low Mallows. [ja redonda.

Gall.–Petite Mauve. *Germ.*–Rundblaetrige Malve. *Hisp.*–Malva de ho-

Plant pubescent. *Root* perennial. *Stem* 9 to 18 inches long, branching only from the root, procumbent. *Leaves* roundish-reniform, with the sinus at base deep and nearly closed, 1 to 2 or 3 inches in diameter, 7-nerved, obscurely 5 or 7-lobed, lobes rounded, crenate-dentate; *petioles* 2 to 6 or 8 inches long. *Flowers* small, axilary; *pedicels* 3 fourths of an inch to 2 inches long, mostly in pairs, unequal in length, when in fruit bent downwards. *Calyx* with 3 linear rather acute *bracts* at base. *Petals* reddish white, with purple veins.

Hab. Yards, gardens, and grass-lots: common. *Fl.* May—Sept. *Fr.* Aug–Octo.

Obs. This foreigner is extensively naturalized; and somewhat troublesome about gardens. It is mucilaginous,—and quite a popular ingredient in cataplasms, demulcent drinks, &c. The *M. crispa*, and *M. moschata*, are frequent in our gardens;—and the latter has in a few instances strayed beyond the garden limits,—but can scarcely be considered as naturalized. Several species have been recently found in the distant territories of this Republic, and in British America; but it is doubtful whether any genuine *Malva* is indigenous in the old thirteen States.

326. ALTHÆA. *L. DC. Prodr.* 1. *p.* 436.

[Greek, *altho*, to heal; from its reputed medical virtues.]

Calyx 5-cleft; *involucre* 5 to 10 or 12-cleft. *Carpels* numerous, arranged orbicularly, 1-seeded.

Herbaceous: leaves alternate, stipular, angulate-lobed; flowers axillary, or somewhat in terminal spikes. *Nat. Ord.* 24. *Lindl.* MALVACEÆ.

1. A. OFFICINALIS, L. *leaves ovate, or subcordate, dentate, often somewhat 3-lobed, softly tomentose on both sides; peduncles axillary, many-flowered, much shorter than the leaves.* Beck, Bot. p. 57.

OFFICINAL ALTHÆA. Vulgò—*Marsh Mallows. Althæa.*

Gallicè—*La Guimauve.* Germ.—*Der Eibisch.* Hisp.—*Malvavisco.*

Plant densely clothed with a soft stellate pubescence. Root *perennial, fusiform.* Stem 2 *to* 4 *feet high, erect, terete, simple.* Leaves 2 *to* 4 *inches long, and an inch and half to* 3 *inches wide, coarsely and unequally dentate and sub-lobed, often somewhat* 3 *or* 5*-lobed;* petioles 1 *to* 2 *inches long, with slender filiform deciduous* stipules *at base.* Flowers *sub paniculate;* common peduncles *axillary, about as long as the petioles,* 3 *to* 6*-flowered;* pedicels 1 *fourth to half an inch long, with minute* bracts *at base.* Involucre *or* outer calyx *usually* 9 *or* 10 *parted;* segments *unequal, lance-linear, or subulate, embracing the calyx.* Calyx segments *orate,*

acuminale. Petals *pale red, or flesh-colored, broad-cuneate, retuse, or emarginate, 2 or 3 times as long as the calyx.*

Hab. *Gardens: frequent.* Fl. *July—August.* Fr. *September—October.*

Obs. *A mucilaginous plant; and occasionally cultivated as a medicinal herb. There are no native species in the U. States; but the* A. rosea, *or* Holly-hock, *is very common, and almost naturalized, about our gardens.*

327. HIBISCUS. *L. Nutt. Gen.* 580.

[An ancient *Greek* name of a plant of the Mallow tribe.]

Calyx 5-cleft, or 5-toothed; *involucre* mostly many-leaved, leaves linear, sometimes united at base. *Stigmas* 5 to 10. *Carpels* united in a 5 or 10-celled capsule; valves septiferous in the middle; cells many-seeded, rarely 1-seeded.

Herbaceous, or shrubby: leaves alternate, stipular, palmate-lobed, or undivided; flowers axillary and terminal. *Nat. Ord.* 24. *Lindl.* MALVACEÆ.

1. H. ESCULENTUS, L. *Herbaceous; leaves somewhat obtusely and palmately 5-lobed, cordate at base, lobes dentate; calyx bursting laterally; fruit pyramidal, sulcate.* DC. Prodr. 1. p. 450.

ESCULENT HIBISCUS. Vulgò—*Okra.*

Root *annual.* Stem 18 *inches to* 3 *feet high, stout, somewhat branched, sparsely and hispidly pilose.* Leaves 3 *or* 4 *to* 6 *inches long, and wider than long, sparsely hirsute and roughish-dotted, pentagonal in their outline, lobed about half way to the base;* petioles 3 *to* 6 *inches long, hirsute, especially along the upper side;* stipules *lance-linear, hispid-ciliate.* Flowers *axillary, solitary;* peduncles *half an inch to an inch long, hispid.* Involucre *hispid, cup-shaped at base, with about* 10 *lance-linear erect distant* segments, *which are half an inch to* 3 *quarters long, and deciduous.* Calyx *membranous,* 5-*toothed, hispid on both sides, bursting laterally.* Petals *about an inch and half long, and an inch wide, roundish-obovate, pale greenish yellow, with a dark purple spot at base.* Stigmas 10, *purplish, pubescent.* Capsule *about* 2 *inches long, erect,* 10-*angled,* 10-*celled, oblong, or rather pyramidal.

Hab. *Gardens: not very common.* Fl. *August.* Fr. *September—October.*

Obs. *This is occasionally cultivated in kitchen gardens, as a pot-herb.*

2. H. TRIONUM, *L.* Herbaceous; leaves deeply 3-parted, lobes lance-oblong, coarsely and obtusely incised-dentate, the middle lobe much the longest; calyx inflated, membranaceous, ribbed, 5-winged at apex. *Beck, Bot. p.* 58.

Vulgò—Bladder Ketmia. Venitian Mallow. Flower of an hour.

Root annual. *Stem* 9 to 18 inches high, somewhat branched, sparingly hispid, with an alternating line of finer pubescence. *Leaves* sparingly pilose, deeply 3-parted, the upper ones almost ternate; *segments* of the *lower* ones half an inch to an inch long, cuneate, incised-dentate at apex,—of the *upper* ones 1 to 2 or 3 inches long, somewhat pinnatifidly incised-dentate, the middle segment nearly twice as long as the lateral ones; *petioles* half an inch to an inch and half long, pubescent, with subulate *stipules* at base. *Flowers* axillary, solitary; *peduncles* about as long as the petioles, pubescent. *Involucre* of about 9 or 10 linear hispid-ciliate leaves. *Calyx* membranaceous, inflated, ovoid, with 20 tuberculate hispid ribs, 5-cleft and 5-winged at apex; *segments* ovate, acute, the margins reflexed,

forming wings. *Petals* greenish yellow, with a purple spot at base, fugacious. *Capsule* roundish-ovoid, hispid. *Seeds* cuneate-obovoid, scabrous.

Hab. Gardens; and cultivated grounds: frequent. *Fl.* July. *Fr.* September.

Obs. This foreigner is becoming naturalized about our gardens, and corn fields. It appears to be the *var. ternatus*, of *Willd. DC.* &c. Eight or nine species—some of them very ornamental—are enumerated as indigenous in the U. States; but none have been yet detected in Chester County. The H. *syriacus* is a very common ornamental shrub in yards, and about houses.

b. *Calyx naked at base.*

328. SIDA. *L. Nutt. Gen.* 577.

[An ancient *Greek* name; of uncertain etymology.]

Calyx 5-cleft, often angled, naked at base. *Style* many-parted. *Carpels* numerous, capsular, 1-celled, 1 or few-seeded, arranged verticillately, more or less united with each other.

Herbaceous, or shrubby: leaves alternate, stipular; flowers axillary, or terminal; pedicels articulated. *Nat. Ord.* 24. *Lindl.* MALVACEÆ.

1. S. SPINOSA, *L.* Leaves ovate-lanceolate, serrate-dentate, with a subspinose tubercle at the base of the petiole; stipules setaceous; pedicels axillary, subsolitary, mostly shorter than the stipules and petiole; carpels 5, bi-rostrate. *Beck, Bot. p.* 58.

SPINOSE SIDA.

Root annual. *Stem* 9 to 18 inches high, suffruticose below, roughish-pubescent, with a few spreading branches near the base. *Leaves* 1 to near 2 inches long, and 1 third to 3 fourths of an inch wide, serrate-dentate, pubescent, especially on the under surface, obtuse at base, the lower ones nearly ovate, or sub-cordate; *petioles* half an inch to 3 quarters in length, with a short subspinose tubercle at base, and a filiform *stipule* on each side 1 third to half an inch long. *Peduncles* about half an inch long, 1 or 2 in each axil, pubescent, articulated near the flower. *Calyx* ribbed and angled, pubescent. *Petals* yellow, obovate, scarcely longer than the calyx. *Carpels* 5, each 1-seeded, with 2 erect hirsute beaks. *Seeds* triquetrous-ovoid, smooth, dark purplish brown.

Hab. Road sides, and waste places: frequent. *Fl.* July—August. *Fr.* September.

Obs. Apparently an introduced plant,—which is gradually extending itself through the County.

2. S. ABUTILON, *L.* Leaves orbicular-cordate, acuminate, crenate-dentate, softly tomentose; peduncles shorter than the petiole; carpels about 15, truncate, obliquely birostrate, hairy. *Beck, Bot. p.* 58.

Vulgò—Indian Mallow. Dewitt weed. Velvet leaf.

Plant softly tomentose. *Root* annual. *Stem* 2 to 4 or 5 feet high, branched. *Leaves* 4 to 6 or 8 inches long, and nearly as wide as long, cordate-orbicular, with an abrupt slender acumination; *petioles* 3 to 5 inches long; *stipules* subulate, caducous. *Flowers* axillary,—usually a 1-flowered peduncle about an inch long,—and a second one (or slender branch) an inch and half long, bearing 1 or 2 small leaves, and 2 or 3 pedicellate flowers which are apt to be abortive. *Calyx* subcampanulate, 5-parted, scarcely angled. *Petals* yellow, cuneate-obovate, a little longer than the calyx. *Carpels* 12 to 15 each, 3-seeded, verticillately arranged in a truncate subcampanulate *head* about 3 fourths of an inch long, and the diameter equal

to the length, crowned with oblique radiating beaks at summit. *Seeds* subreniform, or lunate, somewhat scabrous, dark brown.

Hab. Cultivated lots; roadsides, &c. frequent. *Fl.* July—Sept. *Fr.* Aug—Octo.

Obs. This foreigner is completely naturalized; and is becoming a troublesome weed in our cultivated grounds. It is said that the *seeds*, roasted, make a tolerable substitute for coffee.

CLASS XVI. DIADELPHIA.

Order 2. Hexandria.

329. DIELYTRA (Diclytra. *DC.*). *Hook. Am.* 1. *p.* 35.
[Gr. *Dis*, double, and *Elytron*, an involucre, or sheath; in allusion to the flowers.]

Sepals 2, membranaceous, small, deciduous. *Petals* 4, cruciate, the 2 outer ones equally spurred, or gibbous, at base. *Capsule* oblong, siliquose, 2-valved, dehiscent, many-seeded.

Herbaceous: mostly stemless; root tuberous; leaves radical, multifid; flowers racemose on scapes. *Nat. Ord.* 10. *Lindl.* Fumariaceæ.

1. D. Cucullaria, *Hook.* Tubers trigonous-ovoid; raceme 4 to 10-flowered, secund; spurs elongated, straight, rather acute, divergent. *Hook. Am.* 1. *p.* 35. (Diclytra. *DC. Beck, Bot. p.* 23.).
Fumaria Cucullaria. *Willd. Sp.* 3. *p.* 857. *Mx. Am.* 2. *p.* 51. *Ait. Kew.* 4. *p.* 238.
Corydalis Cucullaria. *Pers. Syn.* 2. *p.* 269. *Muhl. Catal. p.* 63, *Pursh, Am.* 2. *p.* 462. *Nutt. Gen.* 2. *p.* 86. *Bart. Phil.* 2. *p.* 68. *Bigel. Bost. p.* 263. *Florul. Cestr. p.* 78. *Torr. Comp. p.* 259. *Eat. Man. p.* 110.

Hood-like Dielytra. *Vulgò*—Dutchman's Breeches.

Root perennial, tuberous, with fibres below; *tubers* trigonous-ovoid, acuminate (often trigonous-turbinate, and scarcely acuminate), pale red, thickly sprinkled over with small oblong purple dots, the flesh within whitish,—the principal tubers surrounded at base with numerous smaller ones sub-imbricated after the manner of bulb-scales. *Leaves* radical, somewhat triternate, multifid, smooth, glaucous beneath, the segments linear-oblong, mucronate with a short purplish cartilaginous point; *petioles* 3 to 6 or 8 inches long. *Flowers* inodorous. *Scape* 6 to 10 inches high, slender, naked; *raceme* simple, elongated, 4 to 6, 8, or 10-flowered, secund; *pedicels* short, with each a roundish-ovate concave denticulate *bract* at base,—and also a pair of lance-ovate opposite spreading *bracts* near the flower, crosswise with the sepals, or in a line with the spurs. *Sepals* white, lance-ovate, keeled, mostly appressed, nearly half as long as the corolla. *Petals* 4; the 2 *outer* ones larger, arranged crosswise with the sepals, produced at base into 2 straight tapering diverging *spurs* 1 third to half an inch long, white, contracted and yellow at the throat, with an ovate concave spreading apex, or border, the 2 *inner* petals opposite the sepals, linear-oblong, keeled, dilated and fiddle-form at summit, concave, with the keel dilated to a crest, cohering with each other, at apex, and embracing the stigma, yellowish. *Ovary* subcompressed, with a rib or suture on each side; *style* ancipital, tapering; *stigma* compressed crosswise with the style, broad-ovate.

Hab. Rich, moist, shaded grounds: frequent. *Fl.* April—May. *Fr.* May—June.

Obs. I find this species to be much more common than I formerly supposed.

2. D. EXIMIA, *Hook.* Tubers depressed-globose; raceme about 4-flowered; spurs short, slightly incurved, obtuse, nearly parallel. *Hook. Am.* 1. *p.* 35. (DICLYTRA. *DC. Beck, Bot. p.* 23.).
Also, D. canadensis. *DC. Prodr.* 1. *p.* 126. *Lindl. Ency. p.* 600

CHOICE, OR EXCELLENT DIELYTRA.

Root perennial, tuberous, with numerous slender fibres below; *tubers* depressed-globose, smooth, tawney-yellow throughout, clustered and concatenated, the largest ones half an inch in diameter. *Leaves* nearly as in the preceding,—but the segments narrower, more linear, and of a deeper green, or not quite so glaucous. *Flowers* very fragrant. *Scape* 4 to 6 or 8 inches high, slender, naked; *raceme* simple, short, 3 to 5- (usually 4-) flowered; *pedicels* short, with each an ovate-oblong *bract* at base which is often mucronate, serrate, and marked with lines of purple dots on the back,—also a pair of opposite *bracts* near the flower, colored slightly on the back. *Sepals* very small, dentate—sometimes a mere subulate point, or rudiment. *Petals* 4; the 2 *outer* ones gibbously produced at base, or with nearly parallel short rounded *spurs* about 2 lines long, very white, contracted at throat, with an ovate concave spreading border, which is mostly white, sometimes tinged with purple,—the 2 *inner* petals linear, strongly keeled, the summits dilated, concave, fiddleform, broadly crested on the back, dark purple within, cohering at apex and embracing the stigma. *Style* somewhat quadrangular; *stigma* compressed, roundish-ovate.

Hab. Rich, moist grounds; Kimberton: rare. *Fl.* April—May. *Fr.* May—June.

Obs. This is the D. *canadensis*, *DC.* or *var. b.* (*canadensis*) of Prof. *Hooker*,—who thinks it is not specifically distinct from D. *eximia*. It *may*, also, be the D. *formosa*, of some of the American Botanists; but that species, as I recollect it some years since in the Bartram Botanic Garden, has bright purple flowers. The flowers of our plant are remarkably fragrant,—the odor resembling that of the *lilac*. It was first detected in this County by Miss A. KIMBER, in 1829,—in the meadows along French Creek, near Kimberton. I have received very fine specimens from Kentucky, from my friend Prof. SHORT. One or two additional species are enumerated in the U. States.

330. ADLUMIA. *Raf.* *DC. Syst.* 2. *p.* 111.

[Dedicated to the late Major *John Adlum*; a distinguished cultivator of the vine.]

Sepals 2, lance-ovate, membranaceous, deciduous. *Petals* 4, cohering in a monopetalous spongy persistent corolla, 4-lobed at apex, and bi-gibbous at base. *Capsule* siliquose, linear-oblong, 2-valved, many-seeded, invested by the fungous corolla.

Herbaceous: caulescent; climbing; leaves alternate, bipinnately dissected; flowers in axillary corymbose racemes. *Nat. Ord.* 10. *Lindl.* FUMARIACEÆ.

1. A. CIRRHOSA, *Raf.* Stem slender, climbing by the cirrhose petioles; leaves superdecompound, glaucous. *Beck, Bot. p.* 24.
Fumaria fungosa. *Willd. Sp.* 3. *p.* 857. *Ait. Kew.* 4. *p.* 239.
F. recta. *Mx. Am.* 2. *p.* 51.
Corydalis fungosa. *Pers. Syn.* 2. *p.* 269. *Muhl. Catal. p.* 63. *Pursh, Am.* 2. *p.* 463. *Nutt. Gen.* 2. *p.* 86. *Bigel. Bost. p.* 263. *Torr. Comp. p.* 259. *Eat. Man. p.* 110.

CIRRHOSE ADLUMIA. *Vulgò*—Climbing Fumitory.

Plant smooth. *Root* biennial. *Stem* 8 to 15 or 20 feet long, slender, branching and climbing. *Leaves* 4 to 6 or 8 inches long, bipinnately dissected, or branched

the principal divisions distant, on slender petioles, the midrib or common petiole twining like a tendril, and supporting the plant; *segments* one third to 3 fourths of an inch long, and 1 fourth to half an inch wide, obliquely ovate, or cuneate-obovate, incised, or entire, subpetiolate. *Racemes* axillary, compound, 3 or 4 to 10 or 12-flowered, branches trifid, the common peduncle mostly arising from, or adnate to, the base of the petiole; *pedicels* about half an inch long, with minute *bracts* at base, thickened at apex. *Sepals* small, lance-ovate, acuminate, striate, produced at base. *Corolla* pale violet-purple, one half to 2 thirds of an inch long, compressed, lance-oblong, subcordate at base, contracted at throat, of a cellular spongy texture, persistent, and becoming a dirty white. *Capsule* about half an inch long, 4 to 6-seeded, sheathed by the persistent corolla. *Seeds* subreniform-globose, slightly compressed, smooth, shining black.

Hab. Banks of the Brandywine; Coatesville: rare. *Fl.* July–Aug. *Fr.* Aug–Sept.

Obs. Collected by Mr. JOSHUA HOOPES, in 1835. It is the only species of the genus; and is often cultivated as an ornamental climber, upon arbors, &c.

331. CORYDALIS. *Vent.* *Nutt. Gen.* 587.

[An ancient *Greek* name for the fumitory; from which it has been separated.]

Sepals 2, membranaceous, minute, deciduous. *Petals* 4, somewhat cohering, the upper one produced into a spur at base. *Capsule* siliquose, linear-oblong, mostly acuminate with the persistent style, 2-valved, many-seeded.

Herbaceous: caulescent; leaves mostly alternate, multifid; flowers racemose, terminal, and opposite the leaves. *Nat. Ord.* 10. *Lindl.* FUMARIACEÆ.

1. C. AUREA, *Willd.* Stem branched, diffuse; leaves glaucous, pinnately divided, divisions incised-pinnatifid, segments linear-oblong, acute; bracts oval-lanceolate, acuminate, subdenticulate, mostly longer than the pedicels; siliques terete, torulose. *Beck, Bot. p.* 24.

GOLDEN CORYDALIS.

Plant smooth. *Root* annual? *Stem* 2 or 3 to 6 or 8 inches high, striate-angled, often diffusely branching from the base. *Leaves* petiolate, 3 to 5-parted; divisions petiolate, pinnatifidly incised; segments often bifid, the terminal ones trifid; *radical* or lower leaves mostly numerous, on long petioles. *Racemes* mostly opposite the leaves; *pedicels* 1 third to 2 thirds of an inch long; *bracts* rather large, at first longer, finally often shorter, than the pedicels. *Sepals* very minute, lance-linear or subulate (orbicular, *DC.*), slightly produced at base. *Corolla* bright yellow, somewhat ringent,—the upper petal produced at base into a short obtuse slightly incurved spur; the *border* or summit of the upper and lower petals dilated, ovate, dentate, crested on the back—that of the upper petal diverging, with the margins reflexed.

Hab. Bank of the Schuylkill, at Black Rock: rare. *Fl.* May. *Fr.* June.

Obs. This pretty little plant was found growing on a rock, in the above locality, by Miss MARTHA KIMBER, in 1835. It is very rare,—and the specimens are small (2 to 4 inches high): under culture, in gardens, it becomes much stouter. One or two additional species are enumerated in the U. States.

332. FUMARIA. *L.* *Nutt. Gen.* 588.

[Latin, *Fumus*, smoke; perhaps in allusion to its glaucous hue.]

Sepals 2, deciduous. *Petals* 4, the lower one linear, free, the others cohering at base, the upper one produced into a spur at base. *Capsule*

siliculose, obovoid, or subglobose, not pointed with the style, indehiscent, 1-seeded.

Herbaceous: caulescent; leaves mostly alternate, decompound; flowers racemose, terminal, or opposite the leaves. *Nat. Ord.* 10. *Lindl.* FUMARIACEÆ.

1. F. OFFICINALIS, *L.* Stem sub-erect; leaves superdecompound, incised, segments sub-linear; racemes rather loose; pedicels of the fruit erect, twice as long as the bracts; capsule subglobose, retuse. *Beck, Bot. p.* 23.

OFFICINAL FUMARIA. *Vulgò*—Common Fumitory.

Gallicè—La Fumeterre. *Germ.*—Der Erdrauch. *Hisp.*—Palomilla.

Plant smooth, glaucous. *Root* annual. *Stem* 9 to 18 inches high, branched, somewhat straggling. *Leaves* petiolate, bipinnately branching; divisions distant, petiolate; subdivisions cuneate, pinnatifidly incised; segments sublinear, short. *Racemes* 1 to 2 or 3 inches long; *pedicels* 2 or 3 lines long, thick, clavate; *bracts* small, oblong, acuminate. *Sepals* lance-ovate, acuminate, denticulate, produced and dentate at base. *Corolla* slender, pale violet purple with a leaden tinge, deeper purple at summit, with green keels. *Style* deciduous. *Capsule* roundish-obovoid, retuse, slightly compressed, striate, smooth. *Seed* 1, subreniform-globose.

Hab. Gardens, and cultivated lots: frequent. *Fl.* May—Aug. *Fr.* July—Sept.

Obs. This is naturalized to some extent, about our gardens, &c. There are no native species, as the genus is now restricted, in the U. States.

Order 3. Octandria.

333. POLYGALA. *L. Nutt. Gen.* 589.

[Gr. *Poly*, much, & *Gala*, milk; from its supposed influence in producing milk.]

Sepals 5, irregular,—the 3 outer ones smaller, bract-like, the 2 inner ones larger, wing-like, petaloid. *Petals* 3 to 5, somewhat cohering, united with the stamens, the lower one keel-form. *Capsule* compressed, elliptic, obovate, or obcordate. *Seeds* pubescent, with arillus-like processes from the *hilum*.

Herbaceous, or frutescent: leaves mostly alternate and simple, without stipules; flowers in terminal racemes, often spikeform, or capitate; pedicels bracteate. *Nat. Ord.* 120. *Lindl.* POLYGALEÆ.

1. P. PURPUREA, *Nutt.* Leaves alternate, oblong-linear; flowers imbricated in ovoid-oblong heads; wings of the calyx ovate, twice as long as the capsule. *Beck, Bot. p.* 44. Icon, *Bart. Am.* 2. *tab.* 47. Not of *Ait.* nor *Lindl.*.

P. sanguinea. *Mx. Am.* 2. *p.* 52. *Pers. Syn.* 2. *p.* 275. *Muhl. Catal. p.* 63. *Pursh, Am.* 2. *p.* 465. *Bigel? Bost. p.* 264. Not of *Linn.*

PURPLE POLYGALA.

Root annual. *Stem* erect, 6 to 9 or 12 inches high, smooth, angular and slightly winged, somewhat corymbosely branched above, the smaller specimens often simple. *Leaves* half an inch to an inch long, and 1 to 2 lines wide, mostly acute, subsessile. *Heads of flowers* half an inch to near an inch long, and 1 third to half an inch in diameter, ovoid-oblong, or subcylindric, obtuse, the lower flowers falling off and leaving the angular rachis squarrose with the persistent bracts; *pedicels*

about a line in length, each with 3 *bracts* at base,—the lower bract keeled, shorter than the pedicel, the lateral ones membranaceous, and very minute. *Sepals* very unequal,—the 3 *outer* ones small, bract-like, 2 on the lower side, and 1 rather larger on the upper side,—the 2 *inner* ones (called *wings*) much larger, situated on the lower side of the flower, erect, ovate, unguiculate, mostly bright purple, with tinges of green, sometimes almost entirely green. *Petals* linear-oblong, or spatulate, more or less cohering together, and adnate to the stamens, yellowish-green, tipt with deeper yellow at summit. *Capsule* compressed, roundish-ovate, emarginate, 2-celled; cells 1-seeded; the *dissepiment* transverse. *Seeds* pyriform, pendulous, hairy, dark brown,—with 2 linear cellular arillus-like processes from the pointed summit, or *hilum*, lying parallel along one side, the length of the seed.

Hab. Low grounds; borders of woods: frequent, *Fl.* July-Sept. *Fr.* Aug-Octo.

Obs. This seems to have been confounded with P. *sanguinea*, until Mr. *Nuttall* drew the distinction between them.

2. P. AMBIGUA, *Nutt.* Stem with erect virgate branches; leaves linear, the lower ones verticillate, the others alternate; racemes spikeform, on long peduncles; wings of the calyx orbicular-ovate, veined, as long as the capsule. *Beck, Bot. p.* 45.

AMBIGUOUS POLYGALA.

Root annual. *Stem* erect, 9 to 12 or 15 inches high, smooth, angular, with numerous slender erect branches. *Leaves* 1 fourth of an inch to an inch long, and about 1 line wide, acute, narrowed at base, sessile,—the lower ones somewhat verticillate, the upper ones scattered, remote, and small on the branches. *Racemes* half an inch to an inch or inch and half long, and 2 or 3 lines in diameter, acute, on slender naked peduncles 1 to 2 inches long; *pedicels* short but distinct, each with 3 small caducous *bracts* at base, the 2 lateral bracts very minute,—the lower flowers falling off, leaving a naked dentate rachis at the base of the racemes. *Flowers* green, or greenish white, more or less tinged with purple,—the purple hue not unfrequently predominating. *Seeds* small, pyriform-oblong, hispid, dark brown, the arillus-like processes somewhat spatulate, diverging, scarcely half as long as the seed.

Hab. Sterile soils; Mica-slate hills, &c. frequent. *Fl.* July-Sept. *Fr.* Sept—Octo.

3. P. VERTICILLATA, *L.* Stem with spreading subverticillate branches; leaves lance-linear, mostly verticillate, or opposite; racemes spikeform, on rather short peduncles; wings of the calyx orbicular-ovate, shorter than the capsule. *Beck, Bot. p.* 45.

VERTICILLATE POLYGALA.

Root annual. *Stem* erect, 3 to 6 or 8 inches high, smooth, angular, diffusely and brachiately branched, the principal branches subverticillate. *Leaves* 1 third of an inch to an inch long, and about 1 line wide, acute, narrowed at base, sessile, verticillate or opposite at the base of the branches, with a few alternate ones on the branches. *Racemes* 1 third to 3 fourths of an inch long, and 2 or 3 lines in diameter, acute, on slender peduncles 1 third to 3 fourths of an inch long; *pedicels* very short, each with 3 minute caducous *bracts* at base,—the lower flowers falling off, leaving a naked dentate rachis at the base of the racemes. *Flowers* greenish white, rarely tinged with purple, mostly smaller than in the preceding species. *Capsule* mostly longer than the wings of the calyx. *Seeds* very similar to those of the preceding.

Hab. Dry banks; borders of woodlands: frequent. *Fl.* July-Sept. *Fr.* Aug-Octo.

Obs. This is certainly nearly allied to the preceding; but may be readily dis-

tinguished, on comparison, by its generally verticillate leaves,—and its spreading branches, which are also more or less verticillate, and brachiately subdivided. It is a humbler plant, and less frequent, than P. *ambigua*.

4. P. Senega, *L.* Stems numerous, simple, terete, rather erect; leaves alternate, broad-lanceolate, tapering at each end; raceme spike-form, elongated, flaccid; wings of the calyx elliptic-ovate, veined, as long as the capsule. *Beck, Bot. p.* 45.

Vulgò—Seneka Snake-root. Milk-wort. Mountain Flax.

Root perennial, large, firm and ligneous, with coarse branches. *Stem* 9 to 15 inches high, mostly several from the same root, simple, herbaceous, rather flaccid and oblique, terete below, slightly angular above, minutely roughish-pubescent, with numerous small ovate sessile scale-like leaves at and near the base. *Leaves* 1 to 2 or 3 inches long, and 1 third of an inch to near an inch wide, smoothish, slightly serrulate or scabrous on the margin, more or less acuminately tapering at apex, and narrowed at base to a short petiole. *Raceme* 1 to 2 or 2 and a half inches long, and 1 fourth to 1 third of an inch in diameter, somewhat nodding, or flaccid, terminal, on a naked peduncle about an inch long; *pedicels* very short, each with a lance-oblong *bract* at base longer than the pedicel, and 2 very minute lateral bracts. *Flowers* greenish white. *Capsule* compressed, orbicular, retuse. *Seeds* large, pyriform, hairy, the arillus-like processes nearly as long as the seed.

Hab. Hilly woodlands; along Brandywine: frequent. *Fl.* May. *Fr.* July.

Obs. The *root* of this is well known, in the shops, for its active medical properties. It is particularly valuable as a stimulating expectorant. Sixteen or seventeen additional species are enumerated in the U. States.

Order 4. Decandria.*

Div. I. Curvembriæ. *The radicle curved back upon the cotyledons.*

Sub-Ord. 1. Papilionaceæ. *Calyx* with the segments distinct. *Corolla* papilionaceous. *Stamens* perigynous.

A. Phyllolobeæ—*Seeds with the cotyledons foliaceous, or becoming green leaves in germination; not esculent.*

1. Sophora Tribe. *Stamens* distinct. *Legume* continuous. Sophoreæ. *DC.*

334. BAPTISIA. *Vent. Nutt. Gen.* 400.

[Greek, *Bapto*, to Dye, in allusion to its coloring properties.]

Calyx 4 or 5-cleft, sub-bilabiate. *Petals* 5, nearly equal; *vexillum*

* The plants of this Order all belong to a large and highly natural Family (*Nat. Ord. 77. Lindl.* Leguminosæ); and I have transferred to it a few kindred Genera which are usually placed in the Class *Decandria*,—but which, I think, may be arranged here without much violence to the Linnæan System, and thereby render the groupe more complete. The *Leguminosæ* comprise *Trees*, *Shrubs*, and *Herbaceous* plants, of various habit; *leaves* alternate, stipular, mostly compound—the *petiole* usually tumid at base; *flowers* axillary, solitary, racemose, or paniculate,—the *corolla* mostly irregular, and generally papilionaceous; *fruit* chiefly a coriaceous or membranous 2-valved *Legume*; *seeds* reniform, or oval, rarely arillate, affixed alternately to each valve, along the upper suture of the legume.

with the sides reflexed. *Stamens* deciduous. *Legume* ventricose, stipitate, many-seeded.

1. B. TINCTORIA, *Br.* Leaves trifoliate, petiolate, the upper ones subsessile; leaflets cuneate-obovate; stipules minute, subulate, deciduous; racemes terminal, few-flowered; legume on a long stipe. *Beck, Bot. p.* 77.

Podalyria tinctoria. *Willd. Sp.* 2. *p.* 503. *Mx. Am.* 1. *p.* 265. *Pers. Syn.* 1. *p.* 453. *Muhl. Catal. p.* 41. *Pursh, Am.* 1. *p.* 308. *Bigel. Bost. p.* 170.

DYER'S BAPTISIA. *Vulgò*—Wild Indigo.

Plant glabrous, turning bluish black in drying. *Root* perennial. *Stem* about 2 feet high, herbaceous, much branched and bushy. *Leaflets* half an inch to an inch long, and 1 fourth to half an inch wide, cuneate-obovate, rounded at apex and often slightly emarginate, subsessile; *common petiole* 1 line to 1 fourth of an inch long, *Flowers* in small terminal racemes; *pedicels* 1 to 3 or 4 lines long. *Calyx* 4-cleft, the upper segment larger, (or 2 segments cohering in one), and rather obtuse. *Petals* yellow. *Legumes* 1 third to half an inch long, inflated or roundish, with keel-like margins, mucronate with the subulate persistent style,—finally elevated on a slender exserted *stipe* as long or longer than the pedicel of the flower, and leaving the calyx apparently near the middle of the pedicel.

Hab. Dry hilly woodlands: common. *Fl.* June—August. *Fr.* September.

Obs. It is said this plant will yield a considerable quantity of inferior Indigo. Six or seven additional species are enumerated in the Southern States of this Union.

2. LOTUS TRIBE. *Stamens* with the filaments united. *Legume* continuous. LOTEÆ. *DC.*

Sub-Tribe 1. Mostly fruticose. *Leaves* simple, or trifoliate, rarely pinnate. *Stamens* mostly Monadelphous. GENISTEÆ. *DC.*

335. CROTALARIA. *L. Nutt. Gen.* 593.

[Greek, *Krotalon*, a rattle; the seeds becoming loose in the mature pods.]

Calyx 5-parted, sub-bilabiate; upper lip bifid, lower lip trifid. *Vexillum* large, mostly obcordate; *keel* falcate, acuminate. *Filaments* all united, or often with a fissure on the upper side. *Legume* turgid, inflated, stipitate, mostly many-seeded.

1. C. SAGITTALIS, *L.* Stem erect, hirsute; leaves simple, oblong-lanceolate, hairy; stipules lanceolate, acuminate, decurrent; racemes about 3-flowered. *Beck, Bot. p.* 77. var. oblonga. *Mx. Am.* 2. *p.* 55.

ARROW-LIKE CROTALARIA. *Vulgò*—Rattle-box.

Root annual. *Stem* herbaceous, 4 to 8 or 10 inches high, somewhat branched above. *Leaves* half an inch to 2 inches long, and 2 or 3 lines to half an inch wide, sessile, the lower ones somewhat elliptic-lanceolate, the upper ones sublinear; *stipules* of the upper leaves decurrent, sagittate at summit. *Racemes* mostly opposite the leaves, pedunculate, 2 to 4-flowered; *pedicels* 2 or 3 lines in length, hirsute, with a small leaf-like lanceolate *bract* at base. *Calyx* hairy; *segments* linear-lanceolate, rather longer than the corolla. *Corolla* yellow; *vexillum* broad, cuneate-obovate. *Legume* 3 fourths of an inch to an inch long, and 1 third to half an inch in diameter, inflated, smooth, finally nearly black, obliquely mucronat

with the persistent base of the style, supported on a short *stipe* in the tube of the calyx. *Seeds* becoming loose, and rattling in the parchment-like legume.

Hab. Dry, sandy banks; roadsides: frequent. *Fl.* July—Aug. *Fr.* Aug—Sept.

Obs. Two or three additional species are enumerated in the U. States;—though I have a suspicion the C. *Purshii, DC.* (C. *lævigata, Pursh,*) may be only a *variety* of the C. *parviflora.* There is a species of this genus (C. *juncea, L.*) which in 1807, I observed was extensively cultivated in Bengal, near Calcutta, as a substitute for *Hemp.* I succeeded in growing it, at West Chester, on my return; but I doubt its being worthy of culture in this country.

Sub-Tribe 2. Mostly herbaceous. *Leaves* mostly trifoliate; primordial ones alternate. *Stamens* Diadelphous. TRIFOLIEÆ. *DC.*

336. MEDICAGO. *L. Nutt. Gen.* 624.

[So named, by the Greeks, from its having been introduced by the *Medes.*]

Calyx subcylindric, 5-cleft. *Keel* somewhat remote from the vexillum. *Legume* of various forms,—always more or less falcate, or spirally twisted,—mostly many-seeded, rarely 1-seeded.

1. M. LUPULINA, *L.* Stem procumbent; leaflets cuneate-obovate, denticulate at apex; stipules ovate-lanceolate, acuminate, mostly dentate; racemes capitate, ovoid, on longish peduncles; legumes reniform, reticulately veined, scabrous, 1-seeded. *Beck, Bot. p.* 78.

HOP-LIKE MEDICAGO. *Vulgò*—None-such.

Gallicè—Luzerne houblonnée. *Germanicè*—Die Hopfen luzerne.

Root biennial, *Willd. DC.* &c. annual, *Sm. Torr. Beck,* &c. *Stem* 6 to 9 or 12 inches long, mostly several from the same root, procumbent, or ascending, somewhat branched, angular, pilose. *Leaflets* half an inch to near an inch long, and 1 third to 3 fourths of an inch wide, mostly cuneate-obovate, sometimes nearly rhomboid, obtusely denticulate above the middle, retuse at apex, with a short broad acute central point,—*lateral* leaflets subsessile, *terminal* one petiolate; *common petioles* 1 fourth of an inch to an inch long; *stipules* semi-amplexicaul, acuminate, generally dentate. *Heads* of flowers small, at first roundish, finally oblong, on slender axillary pubescent *peduncles* 1 to 2 inches in length; *pedicels* very short, with minute subulate-filiform *bracts* at base. *Calyx* hairy, with acute unequal *segments. Corolla* yellow, small. *Legume* short, compressed, curved or reniform, rugose-nerved and hairy, 1-celled and 1-seeded.

Hab. Fields, and roadsides; Marshallton: rare. *Fl.* June—Aug. *Fr.* July—Sept.

Obs. This is an introduced plant; and not generally naturalized in this County. I am not certain that I have observed it, except in the vicinity of the late *Humphrey Marshall's* Botanic garden.

2. M. SATIVA, L. *Stem rather erect; leaflets obovate-oblong, or cuneate-oblong, dentate and mucronate at apex; stipules lanceolate, nearly entire; racemes oblong, rather loose; legumes spirally contorted, smoothish, many-seeded.* DC. Prodr. 2. p. 173.

CULTIVATED MEDICAGO. Vulgò—*Lucerne. Spanish Trefoil.*

Gall.—*Luzerne.* Germ.—*Der Schneckenklee.* Hisp.—*Alfalfa. Mielga.*

Root *perennial, subligneous.* Stem 1 *to* 2 *feet high, erect, or oblique, sub-terete, smoothish, or slightly pilose, branched.* Leaflets *half an inch to an inch long, and* 2 *or* 3 *lines to half an inch wide, often emarginate, pilose beneath,*—lateral *ones subsessile,* terminal *one petiolate;* common petiole 1 *fourth to* 3 *fourths of an inch*

long; stipules *mostly entire, tapering to a long slender point.* Racemes *erect, on axillary peduncles half an inch to an inch long;* pedicels *1 to 2 lines in length, with each a subulate* bract *at base as long as the pedicel.* Calyx *hairy;* segments *nearly equal, subulate.* Corolla *violet-purple, nearly twice as long as the calyx.* Legumes *cochleate or spirally coiled, reticulately veined, somewhat pilose.* Seeds *several.*

Hab. *Cultivated Lots: not common.* Fl. *June—July.* Fr. *August.*

Obs. *This has been occasionally cultivated, on a small scale, but it is not much esteemed by our farmers, and is now generally neglected. There are no native species in the U. States.*

337. TRIFOLIUM. *L. Nutt. Gen.* 604.

[Latin, *Tres*, three, and *Folium*, a leaf; characteristic of the genus.]

Calyx tubular, persistent, 5-cleft; segments subulate. *Keel* shorter than the wings and vexillum. *Legume* small, scarcely dehiscent, 1 or 2- (rarely 3 or 4-) seeded, mostly included in the calyx. *Flowers* densely spiked, or capitate.

1. T. ARVENSE, *L.* Stem erect, branched, pilose; leaflets obovate-linear, or cuneate-oblong, somewhat 3-toothed at apex; stipules narrow, hairy, terminating in a long subulate point; spikes oblong, cylindric, softly villose, without bracts at base, pedunculate; calyx-segments equal, setaceous, plumosely villose, longer than the corolla. *Beck, Bot. p.* 79.

FIELD TRIFOLIUM. *Vulgò*—Stone Clover. Welsh Clover. Rabbit foot. *Gall.*—Pied de Lievre. *Germ.*—Der Hasenklee. *Hisp.*—Pie de Liebre.

Plant softly pilose. *Root* annual. *Stem* 6 to 12 inches high, terete, generally much branched. *Leaflets* half an inch to near an inch long, and 1 to 3 or 4 lines wide, subdentate near the apex, obtuse, mostly emarginate and mucronate, all subsessile; *common petioles* 1 fourth of an inch to an inch long; *stipules* adnate to the petioles, membranaceous, nerved, with a long subulate-filiform acumination. *Spikes* half an inch to an inch long, and 1 third to half an inch in diameter, cylindric, obtuse, very villose, and of a pale tawney color, naked at base, on terminal and axillary peduncles half an inch to an inch and half in length. *Corolla* small, inconspicuous, whitish, or pale pink, with a purple spot on the wings. *Legume* 1-seeded. *Seed* oval.

Hab. Stérile, sandy old fields: frequent. *Fl.* June—August. *Fr.* August—Octo.

Obs. Supposed to be a native; if so, it is common to both hemispheres. It is a worthless species,—and indicative of a poor soil, and neglected agriculture.

2. T. PRATENSE, L. *Stems ascending; leaflets oval, or oblong-ovate, often retuse, or emarginate; stipules broad, terminating in a subulate point; heads ovoid, obtuse, dense-flowered, bracteate at base, subsessile; calyx-segments subulate-linear, sub-pilose, scarcely half as long as the corolla, the lower one longer than the rest.* Beck, Bot. p. 79.

MEADOW TRIFOLIUM. Vulgò—*Red Clover. Common Clover.* Gallicè—*Tréfle des Prés.* Germ.—*Der Klee.* Hisp.—*Trebol.*

Root *biennial? (perennial* Willd. DC. &c.) *large, somewhat fusiform, branching below.* Stems *several from the same root, 1 to 2 or 3 feet long, ascending, or de-*

cumbent, angular-striate, pilose, especially towards the summit, somewhat branched. Leaflets 3 *fourths of an inch to an inch and half long, and* 1 *third of an inch to an inch wide, varying from oval to ovate-oblong, sub-rhomboid and lance-ovate, entire, mostly obtuse, the oval ones emarginate, all subsessile, pilose beneath, smooth and green above, and generally with a paler sagittate or lunate spot in the middle;* common petioles *half an inch to* 4 *or* 5 *inches long, the radical ones often much longer;* stipules *membranaceous, nerved, with a subulate sub-pilose acumination.* Heads *of flowers ovoid, or subglobose, an inch or more in diameter, terminal, subsessile, in the bosom of* 2 *opposite subsessile trifoliate* bracts (*one of the bracts sometimes with a single leaflet*) *with dilated stipules embracing the base of the head.* Corolla *purple (sometimes white), the petals united into a slender tube about half an inch long, the vexillum striate with deeper purple veins.* Legume *short, included in the calyx,* 1-*seeded.* Seed *subreniform.*

Hab. *Cultivated fields, and meadows: common.* Fl. *May-Sept.* Fr. *July-Octo.*

Obs. *This is a most valuable plant; and diligently cultivated by all good farmers. It is also extensively naturalized. In conjunction with the* grasses, *especially with* Timothy (Phleum pratense), *it makes first-rate hay. The* seed *is usually sown in the month of March, among wheat and rye, and is mown the second year. Authors generally consider this species a* perennial; *but a distinguished Agriculturist of New England asserts positively that it is* biennial,—*and my own observations incline me to the same opinion. It is certain that a very large proportion of the cultivated plants disappears after the second year; and those which apparently remain may be only a succession of young plants, from fallen seeds. I perceive, also, that* Mr. Sinclair, *in his* Hortus Gramineus, *speaks of the red clover as a biennial.*

3. T. REPENS, *L.* Stems creeping, diffuse; leaflets elliptic-ovate, or roundish-obovate, somewhat retuse, denticulate; stipules scarious, lanceolate, mucronate; heads depressed-globose, on very long axillary peduncles; flowers pedicellate, finally reflexed; legume about 4-seeded. *Beck, Bot. p.* 80.

CREEPING TRIFOLIUM. *Vulgò*—White Clover. Dutch Clover. *Gall.* Triolet. Tréfle blanche. *Germ.* Weisser Klee. *Hisp.* Trebol blanco.

Root perennial. *Stem* 4 to 12 inches long, terete, smooth, procumbent, radicating, diffusely branching from the base. *Leaflets* half an inch to an inch long, and 1 third to 3 fourths of an inch wide, mostly somewhat emarginate, serrulate, or sharply denticulate, smooth, often with a pale lunate spot in the middle, all subsessile; *common petioles* 1 or 2 to 6 or 8 inches long; *stipules* scarious, veined, whitish, abruptly acuminate. *Heads* of flowers depressed-globose, or subcorymbose, on erect, angular-sulcate axillary *peduncles* 2 or 3 to 8 or 12 inches long; *pedicels* 2 or 3 lines long, somewhat pubescent, recurving after flowering, each with a small lance-ovate concave whitish (sometimes purple) *bract* at base. *Calyx* tubular, smooth, greenish white, the limb often purple between the base of the segments; *segments* subulate, unequal, the 2 upper ones rather longer. *Corolla* white, persistent, becoming a palish dirty brown, and nerved. *Legume* oblong, torulose, 1 fourth to 1 third of an inch in length, 2 or 3 to 5-seeded. *Seeds* subreniform.

Hab. Pastures; woodlands, &c. very common. *Fl.* May—Sept. *Fr.* July—Octo.

Obs. The lower flowers open first, and are reflexed in succession,—dividing the head horizontally, between the erect and recurved flowers. This species seems to be common to Europe and America; and the soil, in this country, is so

full of the seeds, that the plant springs up wherever, and whenever, circumstances are favorable to germination. It is rarely, if ever, cultivated, here; but is esteemed an excellent pasture,—though Mr. *Elliott* speaks unfavorably of it, in the South.

4. T. AGRARIUM, *L.* Stem ascending. with erect branches; leaflets obovate-oblong, all subsessile; stipules foliaceous, lanceolate, smooth, often longer than the common petiole; heads elliptic-ovoid, on long peduncles. *Beck, Bot. p.* 79.

FIELD TRIFOLIUM. *Vulgò*—Yellow Clover. Hop Clover.

Root annual. *Stem* 6 to 12 or 15 inches long, hard, rather erect, branching, terete, striate, pubescent with appressed hairs. *Leaflets* half an inch to near an inch long, and 1 eighth to 1 third of an inch wide, ovate or obovate-oblong, inclining to narrow-rhomboid, obtuse, often retuse, denticulate, smooth, all subsessile; *common petioles* 1 fourth of an inch to an inch long; *stipules* linear-lanceolate, acute, not ciliate, the upper ones longer than the petioles. *Heads* of flowers half an inch to 3 quarters long, and about half an inch in diameter, mostly oval, on axillary *peduncles* 3 fourths of an inch to an inch and half long; *flowers* subsessile, finally reflexed, imbricated. *Calyx* subcampanulate, short, smoothish; *segments* unequal, the 2 upper ones shorter. *Corolla* yellow, finally a chestnut brown, scarious, persistent; *vexillum* obcordate, striate-sulcate. *Legume* short, 1-seeded.

Hab. Sandy grounds: not common. *Fl.* June—August. *Fr.* July—September.

Obs. This foreigner is occasionally to be found in the sandy grounds, and along roadsides, towards the Schuylkill; but is yet somewhat rare.

5. T. PROCUMBENS, *L.* Stems mostly procumbent; leaflets obcordate-cuneate, the terminal one petiolate; stipules lance-ovate, ciliate; heads roundish-ovoid, small, on rather short slender peduncles. *Beck, Bot. p.* 79.

PROCUMBENT TRIFOLIUM. *Vulgò*—Yellow Clover.

Root annual. *Stem* 2 or 3 to 6 or 8 inches long, often diffusely branched at base, procumbent, or decumbent, (sometimes nearly erect) slender, hairy, often villose. *Leaflets* 1 fourth of an inch to half an inch long, and 1 eighth to one third of an inch wide, denticulate towards the apex, smoothish, the terminal one on a *petiole* about 2 lines long; *common petiole* 1 fourth to near half an inch long; *stipules* lance-ovate, amplexicaul, ciliate. *Heads* of flowers smaller than in the preceding, subglobose, on slender hairy axillary *peduncles* half an inch to an inch long; *flowers* crowded, subsessile. *Calyx* somewhat hairy; *segments* unequal, the 2 upper very short. *Corolla* yellow, resembling the preceding, but smaller. *Legume* 1-seeded.

Hab. Dry, sandy soils; roadsides: not common. *Fl.* May—Aug. *Fr.* July—Sept.

Obs. This, also, is a foreigner, and is gradually extending itself in our County. It has much general resemblance to the preceding. Eight or ten additional species are enumerated in the U. States.

Sub-Tribe 3. *Leaves* various, trifoliate, or odd-pinnate; primordial ones opposite. *Stamens* mostly Diadelphous. CLITORIÆ. *DC.*

338. GALACTIA. *Mx. Nutt. Gen.* 618.

[Greek, *Gala*, milk; from the species being lactescent.]

Calyx bibracteate, 4-cleft; segments acute, nearly equal. *Petals*

somewhat oblong, and distinct; *vexillum* broader, incumbent. *Style* smoothish; *stigma* obtuse, or obsolcte. *Legume* subterete, many-seeded.

1. G. GLABELLA, *Mx.* Stem procumbent, somewhat twining, more or less pubescent; leaves trifoliate; leaflets ovate-oblong and elliptic, obtuse, often emarginate at each end, subcoriaceous, upper surface shining; racemes few-flowered, about as long as the leaves; style elongated. *Beck*, *Bot. p.* 81.
Dolichos regularis. *Willd. Sp.* 3. *p.* 1049. Also, *Pers. Syn.* 2. *p.* 298. *Muhl. Catal. p.* 64.

SMOOTHISH GALACTIA.

Root perennial, [fusiform, *Mx.*]. *Stem* 2 to 3 or 4 feet long, slender, terete, branching, mostly prostrate, twining, and sometimes climbing over other plants, clothed with a short appressed pubescence, smoothish when old, the young branches often villose. *Leaflets* 2 thirds of an inch to an inch and half long, and 1 third to 3 fourths of an inch wide, mucronate, shining green and smoothish above, paler and pubescent with short appressed hairs beneath, on very short hirsute *petioles* with minute subulate *stipules* at base, the *terminal* leaflet on a prolongation of the common petiole; *common petiole* half an inch to an inch long; *stipules* subulate. *Racemes* axillary, about as long as the leaves, simple, 3 to 6 or 8 flowered; *pedicels* 2 or 3 lines long, pubescent, each with a lance-ovate *bract* at base. *Calyx* more or less pilose with appressed hairs, with 2 small ovate acute *bracts* at base; *segments* lanceolate, acute. *Corolla* purple and white tinged with pale green; *vexillum* obovate, or spatulate-ovate, entire; petals of the keel distinct below, united near the apex. *Ovary* hoary-villose; *style* much longer than the stamens; *stigma* obsolete. *Legume* 1 to 2 inches long, and about 3 lines wide, subfalcate, or obliquely acuminate at each end, pubescent (smooth, *Nutt. DC.*). *Seeds* obliquely oval, of a motley brown color.

Hab. North Valley hill: rare. *Fl.* July—August. *Fr.* September—October.

Obs. Three other species are enumerated in the U. States; two of which (*viz.* G. *mollis*, and G. *pilosa*,) are sadly confounded in the books. The G. *pilosa*, of *Nuttall*, and *De Candolle*, is the true G. *mollis*, of *Michaux*; whilst the G. *pilosa*, of *Elliott*, is a distinct plant,—and yet, unfortunately, is the G. *mollis*, of *Nutt.* & *De Candolle!* This fact was suspected by Mr. *Elliott* himself, and has been satisfactorily ascertained by the Rev. M. A. CURTIS, of N. Carolina—who favored me with good specimens of both plants. Perhaps the confusion may be best removed, by calling the latter plant G. *Nuttallii*.

339. TEPHROSIA. *Pers. Nutt. Gen.* 622.

[Greek, *Tephros*, ash-colored; in allusion to the color of the foliage.]

Calyx without bracts, 5-cleft; segments nearly equal. *Vexillum* large, roundish, silky-pubescent externally, spreading or reflexed; *wings* adhering to the obtuse keel. *Stamens* sub-monadelphous. *Legume* compressed, many-seeded. *Seeds* compressed.

1. T. VIRGINIANA, *Pers.* Leaves odd-pinnate; leaflets in 8 to 12 pairs, oval-oblong, mucronate, hoary-villose beneath; raceme terminal, subsessile; legumes falcate, villose. *Beck*, *Bot. p.* 81.
Galega virginiana. *Willd. Sp.* 3. *p.* 1244. *Mx. Am.* 2. *p.* 67. *Ait. Kew.* 4. *p.* 355. *Muhl. Catal. p.* 65. *Eat. Man. p.* 151.

VIRGINIAN TEPHROSIA. *Vulgò*—Goat's Rue. Cat-gut.

Plant hoary-villose. *Root* perennial, of numerous very long coarse fibres. *Stems* mostly numerous from the root, 9 to 12 or 15 inches high, rather erect, simple, herbaceous. *Leaflets* about an inch long, and 1 fourth to 1 third of an inch wide, the terminal one more or less obovate, or cuneate, all on very short *petioles; common petiole* 2 to 4 inches long, pinnated to the base; *stipules* near half an inch long, subulate-linear, deciduous. *Flowers* large, in a compact terminal raceme 1 to 2 inches in length; *pedicels* 1 fourth to near half an inch long, with lance-linear deciduous *bracts* at base,—mostly 2 or 3 flowers, on longer pedicels, in the axils of the upper leaves. *Calyx* very villose; *segments* lanceolate, with a subulate acumination. *Corolla* ochroleucous, with strong tinges of purple, especially on the wings. *Style* curved upwards, pubescent along the upper side. *Legume* an inch and half to 2 inches long, and 2 to 4 lines wide, sublinear, falcately recurved, very villose, pointed with the persistent style.

Hab. Dry, hilly woodlands; Valley hills: frequent. *Fl.* June—July. *Fr.* Sept.

Obs. This handsome plant is rather abundant on the Great Valley hills—particularly on the South hills, or Mica-slate range; but seems to be pretty much confined to such soils. The infusion of the *root* is a popular vermifuge. Three or four additional species have been found in the Southern States of this Union.

340. ROBINIA. *L. Nutt. Gen.* 620.

[Dedicated to *John* and *Vespasian Robin;* French Botanists.]

Calyx subcampanulate, 5-cleft, the 2 upper segments approximate. *Vexillum* large, smooth, spreading or reflexed; *keel* obtuse. *Legume* compressed, many-seeded, the upper or seed-bearing suture margined.

1. R. Pseud-acacia, *L.* Leaves odd-pinnate; leaflets oblong-ovate; stipules spinose; racemes loose, pendulous; legumes smooth. *Beck, Bot. p.* 82. Icon, *Mx. f. Sylva,* 2. *tab.* 76.

False-Acacia Robinia. *Vulgò*—Locust Tree.

A *Tree*, 20 to 50 or 60 feet high, and 1 to 2 feet in diameter at base. *Leaflets* 3 or 4 to 8 or 9 pairs, 1 to near 2 inches long, and half an inch to near an inch wide, more or less ovate, often nearly elliptic, obtuse, mostly emarginate, slightly mucronate, minutely pubescent, on short *petioles*, each mostly with a small subulate rigid *stipule* at base (the terminal leaflet with *two* stipules); *common petioles* 3 to 6 or 8 inches long, pinnate nearly to the base; *stipules* 2 stout sharp spines 1 third to 2 thirds of an inch long. *Racemes* axillary, simple, pendulous, 3 to 5 inches long; *pedicels* 1 third of an inch long, articulated near the flower. *Calyx* pubescent; *segments* ovate, mutic,—the 2 upper ones cohering, resembling one broad emarginate segment. *Corolla* white. *Style* bearded at and near the summit. *Legume* an inch and half to 3 inches long, and about half an inch wide, veined, smoothish; valves flat, margined along the upper suture.

Hab. Meadows; fence-rows, &c. frequent. *Fl.* May—June. *Fr.* September.

Obs. This tree,—though frequent here, and very abundant on the Mountains,—has never appeared to me like an indigenous plant in this County. The timber is very valuable, and celebrated for its durability. The flowers are fragrant; and the tree is often planted about houses. Two other species occur in the U. States, both of which are to be met with under cultivation, here;—the R. *hispida*, as an ornamental flowering shrub, and the R. *viscosa*, occasionally as a shade tree:—but neither of them can be considered as naturalized in the County.

3. HEDYSARUM TRIBE. *Stamens* mostly united by the filaments. *Legume* with transverse articulations forming 1-seeded cells, or lenticular and 1-seeded. HEDYSAREÆ. *DC.*

341. STYLOSANTHES. *Swartz. Nutt. Gen.* 605.

[Greek, *Stylos*, a column, and *Anthos*, a flower; the flowers appearing stipitate.]

Calyx with a long slender *tube*; limb 5-parted; segments unequal. *Corolla* inserted on the throat of the calyx; *keel* small, bifid at apex. *Stamens* submonadelphous, with the tube slit. *Ovary* sessile; *style* long, straight, filiform; *stigma* capitate, hispid. *Legume* 1-celled, or articulated and 2-celled, the apex sub-uncinate with the recurved base of the style.

1. S. ELATIOR, *Sw.* Stem herbaceous, erect, pubescent on one side; leaves trifoliate; leaflets lanceolate, acute, smooth; spikes few-flowered; bracts lanceolate, hispid-ciliate. *Beck, Bot. p* 83.
S. hispida, *var.* nudiuscula. *Mx. Am.* 2. *p.* 75. var. erecta. *Pursh, Am.* 2. *p.* 480. Not S. *hispida* of *Pers.*

TALLER STYLOSANTHES. *Vulgò*—Pencil Flower.

Root perennial. *Stem* 9 to 15 inches high, somewhat branched above, often several from the root, slender, firm, terete, marked with a broadish alternating pubescent line, the branches at summit hispidly pilose. *Leaflets* 3 fourths of an inch to an inch and quarter long, and 1 eighth to 1 third of an inch wide, rugose-dotted beneath, subsessile; *common petiole* 1 fourth to half an inch long, pubescent; *stipules* sheathing the stem, nerved, pubescent, adnate to the common petiole, with a free subulate-linear acumination. *Flowers* in small terminal clusters, invested with hispid-ciliate *bracts* which are trifoliate, or trifid and membranaceous. *Calyx* with the limb unequally 5-cleft, the 2 upper segments broader, more obtuse, and less deeply cleft; the *tube* long and slender, giving the flower a stipitate appearance. *Corolla* bright yellow, inserted at the throat of the calyx-tube. *Legume* somewhat obovoid and 1-celled, or often articulated in the middle and 2-celled, thickish and suberose, nerved and veined, pubescent, slightly compressed, with a keel-like suture at each margin, and a short abrupt oblique acumination, with the point uncinately recurved.

Hab. North hills of the Great Valley: not common. *Fl.* July-Aug. *Fr.* Sept-Octo.

Obs. The only species known in the U. States. There is a *procumbent variety*, very common in New Jersey; but I have not seen it on this side of the Delaware.

342. DESMODIUM. *Desv. DC. Prodr.* 2. *p.* 325.

[Gr. *Desmos*, a chain, and *eidos*, form; the articulated pods resembling a chain.]

Calyx mostly 5-cleft, sub-bilabiate; upper lip bifid, lower one 3-parted. *Vexillum* suborbicular; *keel* obtuse, not truncate; *wings* a little longer than the keel. *Legume* mostly with several joints, compressed, membranaceous or coriaceous, tenaciously hispid; *joints* 1-seeded, separating at maturity, scarcely dehiscent. *Leaves* trifoliate; *flowers* mostly racemose; *pedicels* in 2's, or 3's, with unequal *bracts* at base.

1. D. PANICULATUM, *DC.* Stem erect, smooth; leaflets oblong-lanceolate, rather obtuse, smoothish; stipules subulate; panicle terminal; legumes with 3 or 4 sub-rhomboid pubescent joints. *Beck, Bot. p.* 85.

Hedysarum paniculatum. *Willd. Sp.* 3. *p.* 1196. *Pers. Syn.* 2. *p.* 322. *Ait. Kew.* 4. *p.* 344. *Muhl. Catal. p.* 66. *Pursh, Am.* 2. *p.* 483. *Nutt. Gen.* 2. *p.* 109. *Bart. Phil.* 2. *p.* 79. *Ell? Sk.* 2. *p.* 210. *Bigel. Bost. p.* 276. *Florul. Cestr. p.* 82. *Torr. Comp. p.* 269. *Lindl. Ency. p.* 632. *Eat. Man. p.* 166. Not of *Mx.*
Also? H. glabellum. *Ell. Sk.* 2. *p.* 210. Not? of *Mx.*

PANICULATE DESMODIUM.

Root perennial. *Stem* 2 to 3 feet high, rather slender, striate, nearly smooth, often branching. *Leaflets* 1 to 3 inches long, and 1 fourth to 3 fourths of an inch wide, obtuse at base, tapering to the apex but rather obtuse, mostly smooth and shining green above, paler and sparingly pilose beneath, slightly revolute on the margin,—the *lateral* leaflets on very short petioles with each a filiform-subulate stipule at base, the *terminal* leaflet with 2 similar stipules near the base, on a partial petiole (or rather a prolongation of the *common* petiole,) about half an inch long; *common petioles* 1 to 2 inches long; *stipules* lance-subulate, deciduous. *Flowers* in paniculate racemes; branches uncinately pubescent; *pedicels* by twos or threes, slender, pubescent, with caducous *bracts* at base, the middle or lower bract larger, lance-ovate, acuminate. *Calyx* pubescent, the 2 upper *segments* cohering in one, or *slightly* cleft at apex, the lower one nearly twice as long as the others. *Corolla* purple. *Legume* mostly of 3 or 4 joints (sometimes 2, and even 1), adhesive by short uncinate hairs; *joints* subtriangular, or somewhat rhomboid by an obtuse angle on the upper margin.

Hab. Woodlands, and borders of thickets: common. *Fl.* August. *Fr.* Sept.

Obs. I have not observed the *bracts at the base of the calyx*, mentioned as part of the generic character, by *De Candolle* and *Beck*. This is readily distinguished from the other species in our County, by its comparatively long and narrow leaflets. It is, however, *not* the *paniculatum*, of *Mx.* which is the *strictum*, of *Pursh* and *DC.* Whether it be the *glabellum*, of *Mx.* and *Ell.* I have not the means of determining. There is some obscurity, and confusion, among a portion of our *Desmodiums*, which I am by no means confident of being able to remove,—although I have examined the plants as carefully as I could, and have had the benefit of some valuable assistance.

2. D. MARILANDICUM. Stem erect, slender, smoothish; leaflets roundish-ovate, obtuse, subcordate at base, smoothish; stipules lance-subulate; panicle terminal; legumes with 2 or 3 semi-orbicular reticulate hispid joints. *Boott* (*in Litt.*). Not of *DC.* nor *Beck.*
D. obtusum. *DC. Prodr.* 2. *p.* 329. *Beck, Bot. p.* 84.
Hedysarum marilandicum. *L. & Clayt.* (*fide Boott. in Litt.*). Not of *Willd. Muhl.* &c.
H. obtusum. *Willd. Sp.* 3. *p.* 1190. *Pers. Syn.* 2. *p.* 321. *Muhl. Catal. p.* 66. *Pursh, Am.* 2. *p.* 482. *Nutt. Gen.* 2. *p.* 109. *Ell. Sk.* 2. *p.* 212. *Florul. Cestr. p.* 82. *Torr. Comp. p.* 268. *Lindl. Ency. p.* 632. *Eat. Man. p.* 166.

MARYLAND DESMODIUM.

Root perennial. *Stem* 18 inches or 2 feet high, slender, striate, smooth, or very sparingly pilose, mostly simple, or paniculate at summit, often several from the same root. *Leaflets* 3 fourths of an inch to an inch long, and half an inch to 3 quarters wide, obtuse or rounded at apex, sometimes emarginate, slightly cordate at base, thinnish, the lower ones often orbicular, all nearly smooth, or with a few hairs on the margin and nerves beneath; *common petioles* half an inch to an

inch long, smoothish; *stipules* lance-subulate, nerved, smoothish. *Flowers* in a terminal erect panicle; branches minutely pubescent; *pedicels* slender, about half an inch long; lower *bract* lance-ovate, acuminate. *Calyx* smoothish; lower *segment* longer, acute, the others rather obtuse. *Corolla* violet-purple. *Legume* mostly of 2 or 3 joints (sometimes 1), hirsute with short uncinate hairs: *joints* semiorbicular, or slightly rounded on the upper margin.

Hab. Dry hilly woodlands: frequent. *Fl.* August. *Fr.* September—October.

Obs. This species, so generally known by the name of *obtusum*, since *Willdenow's* time, proves to be the true and original *marilandicum*, of *Linnæus* ("foliolis subrotundis, &c."); —as I am assured by my highly-valued friend and correspondent, Dr. Boott, of London,—who has obligingly compared our Desmodiums with those in the Herbariums of *Linnæus*, *Pursh*, and others, in that City.

3. D. ciliare, *DC.* Stem erect, rather slender, pilose; leaves somewhat crowded, on short hairy petioles; leaflets small, ovate or oval, obtuse, subcoriaceous, ciliate, and pilose with appressed hairs; stipules subulate-linear,; racemes paniculate, terminal; legumes with 2 or 3 semiorbicular hispid joints. *Beck, Bot. p.* 84.
Hedysarum ciliare. *Willd. Sp.* 3. *p.* 1196. *Pers. Syn.* 2. *p.* 322. *Muhl. Catal. p.* 66. *Pursh, Am.* 2. *p.* 482. *Nutt. Gen.* 2. *p.* 109. *Bart. Phil.* 2. *p.* 79. *Ell. Sk.* 2. *p.* 212. *Torr. Comp. p.* 268. *Eat. Man. p.* 166.
Fringed Desmodium.

Root perennial. *Stem* about 2 feet high, rather slender, angular-striate, hairy and minutely roughish-puberulent, mostly simple, paniculate at summit. *Leaflets* half an inch to an inch long, and 1 third to 2 thirds of an inch wide, ovate, or elliptic, obtuse, often subcordate at base, thickish and subcoriaceous, ciliate, and pilose on both sides with appressed hairs; *common petioles* 1 fourth to near half an inch long, very hairy; *stipules* lance-linear or subulate, nerved, and pilose. *Flowers* in terminal paniculate racemes; branches clothed with a roughish uncinate pubescence; *pedicels* roughish-pubescent; lower *bract* lance-ovate, acuminate, pilose and ciliate. *Calyx* pubescent. *Corolla* violet-purple. *Legume* of 2 or 3 joints (sometimes one), hispid; *joints* semi-orbicular, or obliquely oval or obovate, more or less rounded or convex on the upper margin.

Hab. Sterile old fields; Mica-slate hills: frequent. *Fl.* Aug. *Fr.* Sept—Octo.

Obs. Collected by D. Townsend, Esq. in 1833. This has considerable resemblance to the preceding; but may be distinguished by its pubescence, its smaller and more coriaceous leaflets, and especially by the very short hairy petioles. There is a *variety*, however, with longer petioles, and larger thinner leaflets;—which may, perhaps, be the *var. oblongifolium*, of *Elliott*,—and seems to be intermediate between this and the following.

4. D. rigidum, *DC.* Stem erect, roughish-pubescent; leaflets ovate-oblong, rather obtuse, reticulate, ciliate, scabrous above, pilose and canescent beneath, the terminal one longer; stipules ovate-lanceolate, acuminate, ciliate; racemes paniculate, erect, very long; legumes with 2 or 3 semiorbicular, or oval, hispid joints. *DC. Prodr.* 2. *p.* 330.
Hedysarum rigidum. *Ell. Sk.* 2. *p.* 215. *Eat. Man. p.* 167.
Rigid, or stiff Desmodium.

Whole plant subcanescent. *Root* perennial. *Stem* 2 to 3 feet high, striate, clothed with a roughish uncinate pubescence, paniculate at summit, often with numerous long erect branches. *Leaflets* 1 to 3 inches long, and half an inch to an

inch wide, ovate-oblong, or lance-ovate, mostly obtuse (the lateral ones often elliptic), slightly mucronate, sometimes emarginate, rounded at base, reticulately veined, somewhat coriaceous, yellowish green and scabrous on the upper surface, hairy and somewhat canescent beneath,—the *terminal* one 1 fourth to 1 third longer than the lateral ones; *common petioles* 1 fourth of an inch to an inch long, hairy; *stipules* ovate-lanceolate, with a long acumination, nerved, hairy and ciliate. *Flowers* in long paniculate racemes; branches rough with an uncinate pubescence; *pedicels* pubescent; lower *bract* lance-ovate, acuminate, ciliate. *Calyx* hairy; *segments* acute, the lower one longer, conspicously pilose. *Corolla* violet-purple, becoming greenish. *Legume* mostly of 2 or 3 joints, uncinately hispid; *joints* semiorbicular, oval, or obliquely obovate.

Hab. Dry open woodlands, and clearings: frequent. *Fl.* Aug. *Fr.* Sept—Octo.

Obs. This was collected by D. Townsend, Esq. in 1831. It is in *Muhlenberg's Herbarium*, along with his *Hedysarum ciliare*, and is labelled "*H. canadensi aff.*" I sent it to Dr. Boott, who pronounced it quite new to him, but suggested that it might be the *rigidum*, of *Elliott;* and in confirmation of that suggestion, I find the plant so labelled in the Herbarium of the late Mr. *Schweinitz*, at the Philadelphia Academy. Dr. B. also noticed its affinity to the *canadense*. In its general habit, it has some resemblance to D. *paniculatum*,—and in fact it seems to be intermediate between that species and D. *canadense;* but apparently distinct from both. It must be confessed, however, that there are *varieties* which seem to connect the present species with D. *ciliare* on the one side, and with D. *canadense* and D. *Dillenii* (or D. *marilandicum*, *Willd.* &c.) on the other,—so as to render the discrimination somewhat difficult.

5. D. Dillenii. Stem erect, branching, pilose; leaflets oblong, or ovate-oblong, somewhat glaucous and villose beneath; stipules subulate; racemes paniculate, rather loose and slender; legumes with 3 or 4 rhomboid reticulated pubescent joints. Icon, *Dill. Hort. Eltham. tab.* 144. *f.* 171.

D. marilandicum. *DC. Prodr.* 2. *p.* 328. *Beck, Bot. p.* 84.
Hedysarum marilandicum. *Willd. Sp.* 3. *p.* 1189. *Pers. Syn.* 2. *p.* 321. *Ait. Kew.* 4. *p.* 342. *Muhl. Catal. p.* 66. *Pursh, Am.* 2. *p.* 482. *Nutt. Gen.* 2. *p.* 109. *Bart. Phil.* 2. *p.* 78. *Ell. Sk.* 2. *p.* 214. *Torr. Comp. p.* 268. *Lindl. Ency. p.* 632. *Eat. Man. p.* 166. Not of *Linn.* and *Clayt.* (*fide Boott. in Litt.*).
H. canadense. *Florul. Cestr. p.* 82. Not of *Linn.* &c.

Dillenius's Desmodium.

Root perennial. *Stem* about 2 feet high, striate, puberulent and pilose, branching, branches angular and striate. *Leaflets* an inch and half to 3 inches long, and 3 fourths of an inch to near 2 inches wide, varying from oval to oblong, and ovate, mostly obtuse, sometimes acute, pilose with appressed hairs on both sides, villose when young; *common petioles* half an inch to an inch and half long, pilose; *stipules* subulate, a little dilated at base, pilose. *Flowers* in rather slender paniculate racemes; branches angular, and often sulcate, roughish with uncinate pubescence; *pedicels* roughish-pubescent; lower *bract* lance-ovate, acuminate, pilose. *Calyx* pilose; *segments* lance-ovate, the lower one longer. *Corolla* purple. *Legume* mostly of 3 or 4 joints, uncinately pubescent; *joints* more or less rhomboid by an obtuse angle on the upper margin.

Hab. Woodlands, and borders of thickets: frequent. *Fl.* Aug. *Fr.* Sept—Octo.

Obs. This was mistaken for D. *canadense*, when my Catalogue was published; and indeed I received a specimen of it under that name, from Mr. *Schweinitz*. As it has been ascertained, by Dr. Boott, not to be the *original marilandicum*,—and as the figure of *Dillenius* seems to be intended for it,—I have, at the suggestion of Dr. B. given it the above name.

6. D. viridiflorum, *Beck*. Stem erect, striate, hairy, scabrous at summit; leaflets ovate, mostly obtuse, scabrous on the upper surface, softly villose beneath; stipules ovate-lanccolate, acuminate; panicle terminal, very long, naked; legumes with 3 or 4 obtusely triangular pubescent joints. *Beck, Bot. p.* 84. Not of *DC.*
Hedysarum viridiflorum. *L. Muhl. Catal. p.* 66. *Ell. Sk.* 2. *p.* 217. *Torr. Comp. p.* 268. *Eat. Man. p.* 166. Not of *Willd. Pers. Ait. Pursh, Florul. Cestr.* &c.

Green-flowered Desmodium.

Root perennial. *Stem* 3 to 4 feet high, rather stout, striate, clothed with a hirsute uncinate pubescence, especially towards the summit, paniculately branching, branches long, erect, scabrous, mostly streaked with green and yellow. *Leaflets* 2 to 4 inches long, and 1 to 2 and a half inches wide, ovate, or oblong-ovate, often rather acute, scabrous above, bluish glaucous beneath, and rather densely clothed with a soft villose pubescence; *common petioles* half an inch to an inch long, very hairy,—the terminal leaflet on a petiole as long or often longer than the common petiole; *stipules* ovate-lanceolate, acuminate, hairy and ciliate, striate, smooth within and mostly of a bright chestnut-brown. *Flowers* in long paniculate leafless racemes; branches very rough with uncinate hairs; *pedicels* roughish-pubescent; lower *bract* ovate, acute, pilose. *Calyx* pilose; *segments* lance-ovate, acute, the lower one longer. *Corolla* violet-purple within, bluish green externally. *Legume* mostly of 3 or 4 joints, uncinately pubescent; *joints* obtusely triangular, more or less convex or rounded on the upper margin.

Hab. Woodlands, and thickets; Mica-slate hills: frequent. *Fl.* Aug. *Fr.* Sept-Octo.

Obs. This is pronounced, by Dr. Boott, to be the *true viridiflorum*, of *Linn.* and *Clayton*. It was collected in this County in 1830, by D. Townsend, Esq.

7. D. canescens, *DC?* Stem erect, branching, striate, hairy and scabrous; leaflets ovate, acute, or sub-acuminate, scabrous on both sides; stipules large, obliquely ovate, acuminate, persistent; panicle large, very hairy, canescent; legumes with 5 or 6 oblong-triangular reticulated uncinately-hispid joints. *Beck? Bot. p.* 84.
Also, D. viridiflorum. *DC. Prodr.* 2. *p.* 329.
Also, D. Aikinianum. *Beck, l. c.*
Hedysarum canescens. *L. & Clayton (fide Boott. in Litt.). Muhl. Catal. p.* 66. *Pursh? Am.* 2. *p.* 482. *Nutt? Gen.* 2. *p.* 109. *Torr? Comp. p.* 268. *Eat? Man. p.* 165. Not of *Willd. Pers. Ait.* and *Lindl.*
H. viridiflorum. *Willd. Sp.* 3. *p.* 1192. *Mx. Am.* 2. *p.* 72. *Pers. Syn.* 2. *p.* 322. *Ait. Kew.* 4. *p.* 343. *Bart. Phil.* 2. *p.* 78. *Florul. Cestr. p.* 82. *Lindl. Ency. p.* 632. Also, *Pursh, l. c. Nutt? l. c.* Not of *Linn. Muhl. Ell. Torr. Beck*, and *Eat.*
H. scaberrimum? *Ell. Sk.* 2. *p.* 217.
Also, H. Aikini. *Eat. Man. p.* 166.

Hoary Desmodium.

Root perennial. *Stem* 3 to 4 or 5 feet high, stout, branching, striate, hairy. *Leaflets* 2 to 4 inches long, and 1 to 3 inches wide, ovate, often sub-deltoid, very obtuse at base, acute, or acuminately tapering to the apex (the lower terminal ones sometimes rhomboid-orbicular), pale green, much veined, scabrous with short appressed hairs, especially on the under side, which is sometimes glaucous; *common petioles* 1 to 3 or 4 inches long, stout, striate, pilose; *stipules* large, obliquely ovate, acuminate, nerved, ciliate, persistent. *Flowers* in paniculate racemes; racemes terminal, and axillary on leafy branches, conspicuously clothed with canescent spreading hairs; *pedicels* hairy; lower *bract* large, lance-ovate, acuminate, nerved, pilose and ciliate. *Calyx* pilose, mostly 4-cleft; *segments* lanceolate, acute, the lower one much longer. *Corolla* large, about 3 times as long as the calyx, violet-purple with tinges of green,—becoming greenish on shrivelling, and sometimes deep blue. *Legume* long, mostly of 5 or 6 joints, reticulately veined, uncinately hispid and tenacious; *joints* oblong-triangular, sometimes rather rhomboidal, or obtusely angled on the upper margin.

Hab. Moist grounds; borders of thickets: frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. Dr. Boott informs me that this is the *canescens*, of *Linn.* and *Clayton*,—and the *viridiflorum*, of *Pursh*. It is also, probably, the *scaberrimum*, of *Elliott*; but I have some doubts whether the *canescens*, of *Pers. Ait. Pursh*, &c. be not founded on *Willdenow's* plant of that name,—which is believed to be the *rotundifolium*, *Mx.*

8. D. BRACTEOSUM, *DC.* Stem erect, smooth; leaflets ovate, or lance-ovate, very acute, or acuminate, smooth; stipules obliquely lanceolate, or lance-subulate, acuminate; panicle terminal, elongating, rather slender; bracts ovate, acuminate, striate, smooth; legumes with 4 to 6 triangular-oblong reticulated sparingly-hispid joints. *Beck, Bot. p.* 85.

Hedysarum bracteosum. *Mx. Am.* 2. *p.* 73. *Pers. Syn.* 2. *p.* 322. *Pursh, Am.* 2. *p.* 482. *Bart. Phil.* 2. *p.* 78. *Ell. Sk.* 2. *p.* 213. *Florul. Cestr. p.* 82. *Eat. Man. p.* 167.

H. cuspidatum. *Willd. Sp.* 3. *p.* 1198. *Muhl. Catal. p.* 66. *Nutt. Gen.* 2. *p.* 109. *Bigel. Bost. p.* 276. *Torr. Comp. p.* 269. *Lindl. Ency. p.* 632. Also, *Pers. l. c. Pursh, Am.* 2. *p.* 483.

BRACTEATE DESMODIUM.

Root perennial. *Stem* 3 to 5 feet high, rather stout, simple, or sparingly branched, smooth, or slightly scabrous near the summit. *Leaflets* 2 to 5 inches long, and 1 to 3 inches wide, ovate, or oblong-ovate, obtuse at base, tapering to an acute point, often with a slender conspicuous acumination, thin and smooth, slightly ciliate and scabrous on the margin; *common petioles* 1 to 3 or 4 inches long, striate, smooth; *stipules* obliquely lanceolate with a long acumination, nerved, smooth, sparingly ciliate, deciduous,—the partial stipules filiform-subulate, persistent. *Flowers* in a terminal slender racemose panicle; the branches scabrous with short uncinate hairs; *pedicels* slightly pubescent; lower *bracts* ovate, conspicuously acuminate, smooth, minutely ciliate, imbricated over the flower-buds. *Calyx* smooth, thin and membranous; *segments* lanceolate, acute, the 2 upper ones cohering nearly to the apex, the lower one much longer. *Corolla* reddish purple tinged with violet, nearly 3 times as long as the calyx. *Legume* long (often 2 inches) mostly of 4, 5, or 6 joints, strongly and reticulately veined, sparsely uncinate-hispid on the sides, more densely on the margins, very tenacious; *joints* triangular-oblong, slightly convex on the upper margin.

Hab. Along shaded rivulets; thickets, &c. frequent. *Fl.* August. *Fr.* Septem-

Obs. Prof. *De Candolle* makes the *cuspidatum*, of *Muhl.* and *Willd.* a *variety* of this. Our plant seems to present the principal characters of both.

9. D. ACUMINATUM, *DC.* Stem erect, simple, pubescent, leafy at summit; leaflets ovate, the terminal one broader and orbicular-ovate, all abruptly and conspicuously acuminate, sprinkled with appressed hairs; common petioles long; panicle slender, on a very long terminal peduncle; legumes stipitate, with 2 or 3 semi-oval pubescent joints. *Beck, Bot. p.* 85.

Hedysarum acuminatum. *Mx. Am.* 2. *p.* 72. *Pursh, Am.* 2. *p.* 483. *Ell. Sk.* 2. *p.* 209. *Bigel. Bost. p.* 275. *Florul. Cestr. p.* 81. *Torr. Comp. p.* 269. *Eat. Man. p.* 167.

H. glutinosum. *Willd. Sp.* 3. *p.* 1198. *Pers. Syn.* 2. *p.* 322. *Muhl. Catal. p.* 66. *Nutt. Gen.* 2. *p.* 109. *Bart. Phil.* 2. *p.* 79. *Lindl. Ency. p.* 632. Also, *Eat. Man. p.* 167.

ACUMINATE DESMODIUM.

Root perennial. *Stem* 9 to 15 inches high, striate-sulcate, sprinkled with soft hairs,—the *leaves* all crowded near the summit. *Leaflets* 2 to 4 or 5 inches long, and 1 to 4 inches wide,—the lateral ones obliquely ovate, the terminal ones larger, orbicular-ovate,—all abruptly acuminate, thin, sprinkled with short appressed hairs on both sides; *common petioles* 2 to 6 or 8 inches long, striate-sulcate and pilose; *stipules* subulate, pilose. *Flowers* in a slender racemose panicle, on a terminal pubescent *peduncle* 12 to 18 inches long; *pedicels* about 1 third of an inch long, slender, minutely pubescent, finally scabrous; lower *bract* linear-lanceolate, nerved, ciliate. *Calyx* minutely hirsute; *segments* ovate, nearly equal. *Corolla* pale purple. *Legume* elevated on a smooth angular *stipe* about as long as the pedicel; *joints* 2 or 3 (often 1), slightly connected, broad, semi-oval, or rather semi-obovate, concave on the upper margin, rounded on the lower, pubescent on the sides, and tenacious.

Hab. Rich woodlands: common. *Fl.* July. *Fr.* August—September.

Obs. This is probably the *glutinosum*, of *Willdenow;* but his phrase, "*paniculâ scapiformi e caulis basi,*" is a palpable mistake, which has puzzled American Botanists,—and seems to have arisen from confounding this species with some specimen of the *nudiflorum.*

10. D. PAUCIFLORUM, *DC.* Stem decumbent, or sub-erect, low and slender, mostly simple, pilose; leaves alternate and distant; lateral leaflets obliquely ovate, the terminal one dilated, rhomboid-ovate, all subacuminate and pubescent-ciliate; common petioles rather long; stipules obsolete; raceme slender, few-flowered, on a terminal peduncle; legumes stipitate, with 2 or 3 semi-oval pubescent joints. *DC. Prodr.* 2. *p.* 330.

Hedysarum pauciflorum. *Nutt. Gen.* 2. *p.* 109. *Eat. Man. p.* 167.

FEW-FLOWERED DESMODIUM.

Root perennial, creeping. *Stem* 6 to 9 inches high, rather erect, or decumbent at base, rarely branched, very slender, sulcate-angled, pilose and minutely scabrous,—with the *leaves* scattered, but more approximated near the base and summit. *Leaflets* 1 to 3 inches long, and 3 fourths of an inch to 2 inches wide, abruptly acute, or subacuminate, thin, sprinkled with appressed hairs, and pubescent-ciliate on the margin,—the lateral ones obliquely ovate, the terminal one larger, dilated and rhomboid-ovate; *common petioles* 1 to 3 inches long, slender, striate-sulcate, pilose and roughish; *stipules* obsolete. *Flowers* few (3 or 4 to 8 or 10), in a

slender loose raceme, on a terminal *peduncle* often shorter than the upper leaves, oblique (sometimes nearly twice as long, and erect); *pedicels* 1 third to 3 fourths of an inch long, very slender, minutely pubescent; lower *bract* lance-subulate, hirsute. *Calyx* minutely hirsute; *segments* short, ovate, nearly equal. *Corolla* whitish, or reddish white, small. *Legume* on a *stipe* nearly as long as the pedicel; *joints* 2 or 3, (sometimes 1), slightly connected, broad, semi-obovate, concave on the upper margin, or often nearly straight, rounded on the lower one, clothed on the sides with a short cinereous and very tenacious pubescence.

Hab. Eachus's clearing, West Chester: rare. *Fl.* August. *Fr.* September.

Obs. Collected by D. Townsend, Esq. in 1831. This seems to be rare, here; and is liable to be passed over as a *starved variety* of D. *acuminatum*,—with which it agrees pretty closely in its *fruit;* though the *leaves* are differently disposed, and have more resemblance to those of D. *nudiflorum*. It was sent, with some other species, to Dr. Boott, who promptly recognized it. I have since received good Kentucky specimens from my indefatigable and obliging friend, Prof. Short.

11. D. nudiflorum, *DC.* Stem erect, simple, puberulent, leafy at summit; lateral leaflets obliquely ovate, the terminal one dilated, rhomboid-ovate, all subacuminate and pubescent-ciliate; racemes paniculate, on a very long naked scape from the base of the stem; legumes stipitate, with 3 or 4 obtusely-triangular joints. *Beck, Bot. p.* 85.
Hedysarum nudiflorum. *L. and most of the Authors here quoted.*

Naked-flowered Desmodium.

Root perennial. *Stem* 6 to 12 inches high, angular-striate, minutely pubescent,—the *leaves* all crowded at the summit. *Leaflets* an inch and half to 3 or 4 inches long, and 1 to 2 or 3 inches wide, abruptly acute, or subacuminate, green and a little scabrous on the upper surface, somewhat glaucous beneath, and slightly hairy on the nerves, pubescent-ciliate on the margin,—the lateral ones obliquely ovate, the terminal one larger, rhomboid-ovate; *common petioles* 2 to 5 or 6 inches long, striate-sulcate, somewhat pilose; *stipules* subulate-linear, hairy, caducous. *Flowers* in a slender racemose panicle, on a *scape* 18 inches to 3 feet in length, which proceeds from near the root, and is mostly decumbent at base, becoming nearly upright at a little distance from the stem, and appearing like a distinct plant,—scape smoothish, mostly naked, sometimes with 1 or 2 trifoliate leaves below the panicle (often 2 scapes from the base of the same stem); *pedicels* half an inch to near an inch long, very slender; lower *bract* lance-subulate, pilose. *Calyx* smoothish, whitish, striate with purple, finally spreading; *segments* short, obtuse, nearly equal, the lower one more acute, and somewhat pilose. *Corolla* purple, with the keel whitish,—*vexillum* roundish-obovate, emarginate, with 2 fuscous or dark purplish-brown spots near the base, within. *Legume* on a slender *stipe* nearly as long as the pedicel; *joints* usually 3 or 4, rather slightly connected, somewhat triangular, the lower angle obtuse or rounded, the upper margin nearly straight, or slightly concave, the sides rather sparingly and inconspicuously uncinate-pubescent.

Hab. Woodlands: common. *Fl.* July—August. *Fr.* September.

12. D. rotundifolium, *DC.* Stem prostrate, angular, hirsute; leaflets orbicular, hairy; stipules obliquely ovate, reflexed; racemes axillary, and terminally paniculate, few-flowered; bracts cordate; legumes with 3 to 5 subrhomboid reticulated uncinately-hispid joints. *Beck, Bot. p.* 86.
Hedysarum rotundifolium. *Mx. Am.* 2. *p.* 72. *Pers. Syn.* 2. *p.* 322.

Muhl. Catal. p. 66. *Pursh, Am.* 2. *p.* 484. *Nutt. Gen.* 2. *p.* 110. *Bart. Phil.* 2. *p.* 80. *Ell. Sk.* 2. *p.* 213. *Bigel. Bost. p.* 274. *Florul. Cestr. p.* 82. *Torr. Comp. p.* 268. *Eat. Man. p.* 166.

H. canescens. *Willd. Sp.* 3. *p.* 1189. *Ait. Kew.* 4. *p.* 342. *Lindl. Ency. p.* 632. Also? *Pers. Syn.* 2. *p.* 321. Not of *Linn. Muhl. Pursh?* &c.

ROUND-LEAVED DESMODIUM.

Root perennial. *Stem* 2 to 4 feet long, slender, trailing, somewhat branched, angular, hirsute with spreading hairs. *Leaflets* nearly orbicular, 1 to 2 and a half inches in diameter, thin, pilose with appressed hairs on both sides, ciliate on the margin, somewhat glaucous beneath, the terminal one larger, rhomboid-orbicular; *common petioles* 1 to near 3 inches long, sulcate-striate, hairy; *stipules* obliquely ovate, acuminate, nerved, hairy and ciliate, persistent, mostly reflexed. *Flowers* in axillary pedunculate racemes, also in a loose slender terminal panicle; *pedicels* about half an inch long, pubescent; lower *bract* cordate, acuminate, nerved, ciliate. *Calyx* smoothish; *segments* lanceolate, acute, the lower one prolonged, —or sometimes the segments ovate, nearly equal, densely ciliate. *Corolla* bright purple, with tinges of violet. *Legume* subsessile, of 3 to 5 subrhomboid tenaciously hispid joints.

Hab. Hilly, rocky woodlands: frequent. *Fl.* August. *Fr.* September—October.

Obs. This is the *canescens*, of *Willd.* according to *Muhlenberg*,—who, it may be presumed, was correctly informed on that head; and I apprehend the circumstance has led several subsequent Botanists to confound it (or at least the description of it) with the *true canescens*, of *Linnæus*. Eight or ten additional species are enumerated in the U. States; and probably others remain to be detected. They require to be all brought together, and compared, in order to have them determined accurately. As Prof. *De Candolle* remarks, it is a "*genus viatoribus monographisque valdè commendandum.*"

343. LESPEDEZA. *Mx. Nutt. Gen.* 607.

[Dedicated, by Michaux, to Governor *Lespedez*, of Florida.]

Calyx bibracteate at base, 5-parted; segments nearly equal, lance-linear, or subulate. *Keel* obtuse. *Legume* lenticular, unarmed, 1-seeded, indehiscent. *Leaves* trifoliate; *stipules* cauline, setaceous, partial ones wanting; *flowers* racemose, or spiked; *pedicels* mostly in pairs, with 3 nearly equal *bracts* at base.

1. L. RETICULATA, *Pers.* Stem erect, subsimple; leaflets narrow, oblong-linear, obtuse, mucronate, reticulately veined, hairy beneath; racemes numerous, subumbellate, axillary, subsessile; legumes ovate, acute, or acuminate, reticulate, longer than the calyx. *Beck, Bot. p.* 86.

L. sessiliflora, var. *Mx. Am.* 2. *p.* 70. var. reticulata. *Eat. Man. p.* 203.

L. angustifolia. *Florul. Cestr. p.* 81. Not of *Ell. DC.* &c.

Hedysarum reticulatum. *Willd. Sp.* 3. *p.* 1194. *Muhl. Catal. p.* 66.

RETICULATED LESPEDEZA.

Root perennial. *Stem* 1 to 2 feet high, striate, roughish-puberulent, simple, or with short slender erect branches (sometimes corymbosely branched). *Leaflets* half an inch to an inch long, and 1 to 2 or 3 lines wide, thickly sprinkled with short appressed hairs on the upper surface, pilose beneath with longer appressed and somewhat canescent hairs; *common petioles* 1 fourth of an inch to an inch

long; *stipules* setaceous-subulate. *Flowers* in numerous short clustered axillary racemes; *pedicels* scarcely a line in length, pubescent; *bracts* short, lance-subulate. *Calyx* pubescent, with 2 slender subulate *bracts* at base; *segments* of the calyx subulate. *Corolla* pale purple, with deeper tinges of violet. *Legume* more than twice as long as the calyx, compressed, ovate, with a short abrupt acumination, strongly and reticulately veined, pilose with short appressed hairs.

Hab. Dry banks; Mica-slate hills: frequent. *Fl.* August—Sept. *Fr.* October.

Obs. I can perceive but little to distinguish this from the following, except the narrow sublinear leaves. It was erroneously inserted in my Catalogue as the L. *angustifolia*, of *Elliott*,—a species bearing about the same relation to L. *frutescens*, as this does to L. *sessiliflora*.

2. L. SESSILIFLORA, *Nutt.* Stem erect, somewhat branching; leaflets oblong-oval, obtuse, subvillose beneath; racemes fasciculate, axillary, subsessile; legumes ovate, acute, or acuminate, much longer than the minute calyx. *Beck, Bot. p.* 86.

SESSILE-FLOWERED LESPEDEZA. *Vulgò*—Bush Clover.

Root perennial. *Stem* 1 to 2 feet high, striate, somewhat pubescent, sometimes paniculately branched, often simple. *Leaflets* half an inch to an inch and half long, and 1 third to 2 thirds of an inch wide, ovate-oblong, oval, or sometimes obovate, often retuse at apex, mucronate, the upper surface smoothish, or slightly sprinkled with short appressed hairs, somewhat glaucous and villose beneath; *common petioles* 1 fourth of an inch to an inch long; *stipules* subulate-filiform. *Flowers* in subsessile axillary clusters. *Calyx* pubescent. *Corolla* violet-purple. *Legume* 3 times as long as the calyx, compressed, ovate, mucronate, or acuminate, reticulately veined, and pilose with short appressed hairs.

Hab. Dry woodlands, and thickets: frequent. *Fl.* August—Sept. *Fr.* October

Obs. In our Chester County specimens, the upper surface of the leaves is green, and generally smoothish; but in my specimens from N. Carolina, both sides of the leaves are densely clothed with appressed cinereous and somewhat silky hairs.

3. L. NUTTALLII. Stem erect, hairy, somewhat branched; leaflets oval, ovate and obovate, villose beneath; racemes somewhat spiked, pedunculate, longer than the leaves; legumes lance-ovate, acuminate, very pubescent, rather longer than the calyx.

L. virgata. *Nutt. Herbar.* Not of *DC.*

L. Stuvei. *Florul. Cestr. p.* 81. Not of *Nutt. DC. Beck*, &c.

NUTTALL'S LESPEDEZA.

Root perennial. *Stem* 2 to 3 feet high, striate, often angular towards the summit, mostly very pubescent, more or less branched, sometimes virgately. *Leaflets* half an inch to an inch and quarter long, and 1 third of an inch to near an inch wide, varying from oblong-ovate to oval and obovate, rounded, or retuse at apex, sometimes rather acute, mucronate, the upper surface more or less sprinkled with short appressed hairs, the lower mostly quite villose; *common petioles* 1 fourth of an inch to an inch long, very pubescent; *stipules* lance-subulate. *Flowers* rather crowded in somewhat spiked pedunculate racemes; *peduncles* axillary and terminal, very pubescent, mostly longer than the leaves. *Calyx* clothed with appressed hairs; *segments* long, lance-subulate, or linear-lanceolate, pubescent-ciliate. *Corolla* purple, with tinges of violet. *Legume* scarcely 1 fourth longer than the calyx, compressed, lance-ovate, acuminate, clothed with longish cinereous appressed hairs.

Hab. Dry hills; Mica-slate range: frequent. *Fl.* August—Sept. *Fr.* October.

Obs. This is in Mr. *Nuttall's Herbarium*, in the Philadelphia Academy, under the name of L. *virgata*; but as that name is preoccupied, I have ventured to propose the one here substituted. When my Catalogue was published, I mistook it for the L. *Stuvei*, of *Nuttall*,—to which, in fact, it has some resemblance.

4. L. FRUTESCENS, *Ell.* Stem erect, subsimple, villose; leaflets elliptic-oblong, silky-pubescent beneath; common petioles very short; spikes capitate, ovoid, on short axillary peduncles; legumes elliptic-ovate, pubescent, much shorter than the calyx. *Beck*, *Bot. p.* 87.
L. fruticosa. *Pers. Syn.* 2. *p* 318. *Lindl. Ency. p.* 630.
L. capitata. *Mx. Am.* 2. *p.* 71. *Pursh*, *Am.* 2. *p.* 480. *Nutt. Gen.* 2. *p.* 107. *Bart. Phil.* 2. *p.* 76. *Bigel. Bost. p.* 272. *Eat. Man. p.* 202. Also, *Pers. l. c. DC. Prodr.* 2. *p.* 349. *Lindl. l. c. Beck*, *l. c.*
Hedysarum frutescens. *Willd. Sp.* 3. *p.* 1193. *Ait. Kew.* 4. *p.* 343. *Muhl. Catal. p.* 66.

SHRUBBY LESPEDEZA.

Root perennial. *Stem* 2 to 4 (usually about 3) feet high, leafy, sulcate-striate, very villose, and often tawny, especially when young, mostly simple, sometimes branched at summit, firm when old, but not frutescent. *Leaflets* 3 fourths of an inch to near 2 inches long, and 1 fourth to 3 fourths of an inch wide, mostly obtuse, slightly mucronate, silky-villose beneath (sometimes on both surfaces, especially when young), the upper surface reticulately veined, finally smoothish; *common petioles* 1 or 2 lines in length, very pubescent,—the partial petiole of the terminal leaflet 2 or 3 times as long as the common petiole; *stipules* lance-subulate. *Flowers* crowded in oblong-ovoid or subglobose *heads*, on axillary *peduncles* 1 fourth to half an inch long; *pedicels* very short; *bracts* subulate, hairy. *Calyx* very hairy, deeply 5-parted; *segments* about as long as the corolla, lance-linear, acuminate, 3-nerved, hairy and ciliate. *Corolla* white, or ochroleucous, with a purple spot on the vexillum. *Legume* compressed, elliptic-ovate, pilose, 1 third to 1 half shorter than the calyx-segments.

Hab. Mica-slate hills: not very common. *Fl.* August—Sept. *Fr.* October.

Obs. Collected near Shugart-town, in E. Goshen, by D. TOWNSEND, Esq. in 1829 I have also collected beautiful specimens near Mr. *John D. Steele's*, in W. Bradford,—with the leaves narrower, silky-pubescent on *both sides*, and the stem densely clothed with a tawny villus.

5. L. POLYSTACHYA, *Mx.* Stem erect, paniculate at summit, hoary-villose; leaflets roundish-oval, pubescent; common petioles short; spikes oblong, on long axillary peduncles; legumes elliptic-ovate, pilose, nearly as long as the calyx. *Beck*, *Bot. p.* 87. ICON, *Mx. Am.* 2. *tab.* 40.
L. hirta. *Ell. Sk.* 2. *p.* 207. *Torr. Comp. p.* 267. *Florul. Cestr. p.* 81.
Hedysarum hirtum. *Willd. Sp.* 3. *p.* 1193. *Ait. Kew.* 4. *p.* 344. *Muhl. Catal. p.* 66.

MANY-SPIKED LESPEDEZA.

Root perennial. *Stem* 2 to 4 or 5 feet high, leafy, striate-sulcate, very hairy paniculately branched at summit. *Leaflets* 2 thirds of an inch to an inch and half long, and half an inch to an inch wide, roundish-oval, often rather obovate, and retuse, or emarginate, slightly mucronate, pubescent with appressed rather silky

hairs; *common petioles* 1 line to half an inch long, very hairy; *stipules* lance-linear, nerved, hairy externally. *Flowers* crowded in oblong *spikes* about an inch in length and 2 thirds of an inch in diameter, on axillary villose *peduncles* 1 to 2 or 3 inches long. *Calyx* very hairy, deeply 5-parted; *segments* about as long as the corolla, linear-lanceolate, acuminate, 3 nerved. *Corolla* ochroleucous, with a purple spot on the vexillum. *Legume* compressed, elliptic-ovate, very hairy, nearly as long as the calyx segments.

Hab. Dry, hilly woodlands: frequent. *Fl.* August—September. *Fr.* October.

6. L. VIOLACEA, *Pers.* Stem sub-erect, slender, pubescent, diffusely branching, and somewhat nodding at summit; leaflets oval, or ovate-oblong, hairy beneath; common petioles elongated; raecmes subumbellate, on filiform axillary peduncles mostly longer than the leaves; flowers in pairs, distinctly pedicellate; legumes rhomboid-ovate, reticulate, smoothish. *Beck, Bot. p.* 87.

Also ? L. divergens. *Pursh, Am.* 2. *p.* 481. *Bart. Phil.* 2. *p.* 77. *Bigel. Bost. p.* 273. *DC. Prodr.* 2. *p.* 350. *Florul. Cestr. p.* 81. *Eat. Man. p.* 203.

Hedysarum violaceum. *Willd. Sp.* 3. *p.* 1195. *Ait. Kew.* 4. *p.* 344. *Muhl. Catal. p.* 66.

Also ? H. divergens. *Willd. Sp.* 3. *p.* 1196. *Muhl. l. c.*

VIOLET LESPEDEZA.

Root perennial. *Stem* 1 to 2 feet long, rather erect, more or less hairy, flaccid at summit, and often nodding, or semi-procumbent, with numerous slender spreading leafy branches. *Leaflets* half an inch to an inch and half long, and 1 third of an inch to near an inch wide, varying from ovate-oblong, to elliptic and obovate, mostly obtuse (sometimes acute), often emarginate, slightly mucronate, smoothish above, pilose with appressed hairs beneath; *common petioles* 1 fourth of an inch to an inch and half long, channelled on the upper side, pilose; *stipules* subulate. *Flowers* in 2 or 3 pairs, mostly approximated near the summit of the common peduncle, on *pedicels* 1 to 3 lines long; *common peduncles* mostly longer than the leaves, filiform, often in pairs on the branches, and 1 or 2 subsessile flowers in the axils of the stem leaves. *Calyx* pubescent with appressed hairs; *segments* lance-subulate. *Corolla* violet-purple. *Legumes* 2 or 3 times as long as the calyx, compressed, elliptic, or rhomboid-ovate, acute, reticulately veined, more or less sprinkled with short appressed hairs, sometimes nearly smooth.

Hab. Borders of woods, and thickets: frequent. *Fl.* Aug—Sept. *Fr.* October.

Obs. Judging from all the specimens which I have seen, I incline to think, with Mr. *Nuttall*, Dr. *Bootl*, and others, that the L. *violacea*, and *divergens*, are not distinct species. At all events, I am satisfied that our plant is the true *divergens*, of Authors. The more slender, semi-procumbent specimens, approach the following,—and, I suspect, have been sometimes confounded with it.

7. L. PROCUMBENS, *Mx.* Pubescent; stem procumbent, slender, branching, branches assurgent; leaflets oval, obtuse; raecmes subumbellate, on long erect axillary peduncles; legumes orbicular-ovate, pubescent. *Beck, Bot. p.* 88. Icon, *Mx.* 2. *tab.* 39.

L. prostrata? *Bigel. Bost. p.* 274. *Hook. Am.* 1. *p.* 156. Also? *Pursh, Am.* 2. *p.* 481. *DC. Prodr.* 2. *p.* 350. *Eat. Man. p.* 203. Not? of *Nutt. Ell. Torr.* and *Beck.*

Hedysarum prostratum. *Willd. Sp.* 3. *p.* 1200. *Muhl. Catal. p.* 66. Also, *Pers. Syn.* 2. *p.* 322.

PROCUMBENT LESPEDEZA.

Root perennial. *Stem* 2 to 3 feet long, often several from the same root, very pubescent, trailing, branching; branches erect, or assurgent. *Leaflets* 1 third to 3 fourths of an inch long, and 1 fourth to 2 thirds of an inch wide, oval, or obovate, often emarginate, mucronate, pubescent; *common petioles* 1 line to half an inch long, grooved on the upper side, very pubescent; *stipules* subulate. *Flowers* capitate or in a subumbellate (sometimes oblong) raceme, at the summit of erect axillary *peduncles* 1 to 2 or 3 inches long. *Calyx* pilose; *segments* subulate-lanceolate. *Corolla* purple with strong tinges of violet. *Legume* 2 or 3 times as long as the calyx, compressed, orbicular-ovate, pubescent with short appressed hairs.

Hab. Sandy banks, and dry woodlands: frequent. *Fl.* August. *Fr.* October.

Obs. I have *smoother* specimens, collected on the Brandywine hills by D. TOWNSEND, Esq. which seem to be intermediate between this and the *true prostrata* (or *repens*, of *Muhl.* and *Bart. Phil.*); but I have some doubts of their being really distinct from the present species. Two or three additional species are enumerated in the U. States.

B. SARCOLOBEÆ—*Seeds with thick fleshy or farinaceous cotyledons, not becoming green leaves in germination; esculent.*

4. VICIA TRIBE. *Legume* many-seeded, dehiscent. *Leaves* mostly even-pinnate and cirrhose, the primordial ones alternate. VICIEÆ. *DC.*

344. CICER. *Tournef.* *DC. Prodr.* 2. *p.* 354.
[The *Latin* name for a species of vetch; applied to this genus.]

Calyx 5-parted, the 4 upper segments incumbent on the vexillum; *tube* more or less gibbous at base on the upper side. *Legume* turgid, 2-seeded. *Seeds* gibbous, mucronate.

1. C. ARIETINUM, L. *Leaves odd-pinnate; leaflets cuneate-obovate, serrate; stipules lanceolate, subdenticulate; calyx slightly gibbous.* DC. Prodr. 2. p. 354.

RAM CICER. Vulgò—*Coffee Pea. Chick Pea.*

Gallicè—*Le Pois chiche.* Germ.—*Die Kicher.* Hisp.—*Garbánzo.*

Plant canescent, glandular-pilose, the hairs secreting oxalic acid. Root *annual.* Stem 9 *to* 18 *inches high, sulcate-striate, somewhat flexuose, branching.* Leaflets *about half an inch long, and* 1 *sixth to* 1 *fourth of an inch wide, in* 4 *to* 6 *pairs (often alternate), with a terminal odd one instead of a tendril;* stipules *ovate-lanceolate, often trifid.* Flowers *solitary, axillary;* peduncles *half an inch to an inch long, slender, with* 2 *opposite subulate* bracts *near the middle.* Calyx-segments *lanceolate, unequal, the longest ones about as long as the wings of the corolla.* Corolla *white.* Legume *about* 3 *fourths of an inch long, and near half an inch in diameter, turgid, clothed with glandular hairs.* Seeds *gibbous, in form remarkably resembling a ram's head.*

Hab. *Gardens: not very common.* Fl. *July—September.* Fr. *August—October.*

Obs. *This is sometimes cultivated for the seeds,—which, it is said, afford a tolerable substitute for coffee. There are no native species in the U. States.*

345. FABA. *Tournef.* *DC. Prodr.* 2. *p.* 354.
[The *Latin* name for a bean; appropriated to this genus.]

Calyx tubular, 5-cleft, the 2 upper segments shorter. *Style* bent at a

right angle with the ovary; *stigma* villose. *Legume* large, coriaceous, somewhat tumid. *Seeds* oblong; *hilum* terminal.

1. F. VULGARIS, Mœnch. *Leaflets 2 to 4, oval, mucronate; tendrils obsolete; stipules semi-sagittate, obliquely ovate.* DC. Prodr. 2. p. 354.

Vicia Faba. Willd. Sp. 3. p. 1111. Pers. Syn. 2. p. 308. Ait. Kew. 4. p. 316. Florul. Cestr. p. 131. Lindl. Ency. p. 622. Eat. Man. p. 388.

COMMON FABA. Vulgò—*Horse Bean. Windsor Bean.*

Gallicè—*Fêve de marais.* Germ.—*Die Feld-bohne.* Hisp.—*Habа.*

Root *annual.* Stem 1 *to 2 feet high, erect, simple, striate, smooth.* Leaflets 2 *to 3 inches long, and 1 to 2 inches wide, elliptic, or ovate, sometimes nearly rhomboid, entire, smooth;* stipules *large.* Flowers *in simple erect axillary racemes.* Calyx *smooth;* tube *about half an inch long;* segments *lance-linear.* Corolla *white, with a large black spot on each wing.* Legume *torulose.* Seeds *very large, with the* hilum *at one end.*

Hab. *Gardens: frequent.* Fl. *June—July.* Fr. *August.*

Obs. *Often cultivated for the table; but not generally admired. It is the only species of the genus.*

346. VICIA. *L. Nutt. Gen.* 597.

[The *Latin* name for the Vetch, or Tare.]

Calyx tubular, 5-toothed, the 2 upper teeth shorter. *Style* filiform, bent at a right angle with the ovary; *stigma* villose. *Legume* oblong, many-seeded. *Seeds* with the *hilum* lateral, oval, or linear.

1. V. AMERICANA, *Muhl.* Leaflets 8 to 12, elliptic-lanceolate, obtuse, mucronate, smooth; stipules semi-sagittate, deeply toothed; racemes 4 to 8-flowered, shorter than the leaves. *Beck, Bot. p.* 88.

AMERICAN VICIA.

Root perennial. *Stem* 2 to 3 feet long, somewhat 4-angled, striate, smooth, branching near the base, slender, climbing and supported by the tendrils at the end of the common petioles. *Leaflets* half an inch to an inch and half long, and 1 fourth to near 2 thirds of an inch wide, elliptic-lanceolate, or oblong, mostly obtuse, often slightly retuse at apex, mucronate, sometimes obscurely repand-denticulate, smooth; *common petioles* about 3 inches long, pinnate to the base, terminating in a slender branching tendril; *stipules* semi-sagittate, tapering to an acute point, with several coarse lanceolate acute teeth near the base, nerved, smooth. *Racemes* 4 to 6 or 8-flowered; *peduncles* about an inch long, axillary, angular, slightly pubescent; *pedicels* 1 to 2 lines long. *Calyx* smoothish, nerved; *segments* lance-ovate, rather short, sparingly ciliate. *Corolla* palish-purple, rather large (about 3 fourths of an inch long). *Ovary* compressed, lance-linear, or oblanceolate, narrowed at base, smooth; *style* about a line in length, turned up at a right angle with the ovary; *stigma* bearded with a white villus. [*Legume* linear-oblong, compressed, reticulate, smooth. *Hook.*]

Hab. Banks of the Schuylkill, at Black Rock: rare. *Fl.* June. *Fr.*

Obs. Collected at the above locality, in 1829, by D. TOWNSEND, Esq. and subsequently by Miss A. KIMBER. I have not seen the fruit.

2. V. CRACCA, *L.* Leaflets numerous, lance-linear, or oblong, mucronate, pubescent beneath; stipules lance-linear, with a divaricate subu-

late-linear segment at base on one side, pilose ; racemes many-flowered, longer than the leaves ; flowers secund, crowded, retrorsely imbricated. *Beck*, *Bot. p.* 88. [gel˜wicke.

Vulgò—Tufted Vetch. *Gall.*—Vesce à bouquets. *Germ.*—Die Vo-

Root perennial. *Stem* 18 inches to 3 feet long, slender, 4-angled, striate, pubescent, branching, and climbing by tendrils. *Leaflets* in 5 to 10 pairs, opposite, or alternate, about an inch long, and 1 to 2 or 3 lines wide, sublinear, or lance-oblong, rather obtuse, mucronate, silky-pilose beneath ; *common petioles* 2 to 3 inches long, pubescent, pinnate to the base, terminating in a long branching tendril ; *stipules* lance-linear, entire, or mostly with a divaricate subulate segment at base on one side, pilose and ciliate. *Racemes* 1 to 2 inches long, 10 to 20-flowered, secund, mostly recurved, on axillary sulcate-striate pubescent *peduncles* 1 to 3 inches long ; *flowers* deflected, or imbricated backwards, on short pubescent *pedicels*. *Calyx* somewhat hairy ; upper *segments* very short, obtuse, the lower ones lanceolate, pilose-ciliate. *Corolla* pale violet-purple, scarcely half an inch long. *Style* pilose near the stigma ; *stigma* bearded. *Legume* compressed, oblong, coriaceous, reticulated, smooth, fuscous. *Seeds* subglobose, nearly black.

Hab. Borders of woods, and meadows: not common. *Fl.* June—July. *Fr.* Aug.

Obs. This occurs in several localities,—and is even troublesome about many gardens ; but I am not quite satisfied of its being a native, here.

3. V. SATIVA, *L.* Leaflets 10 or 12, ovate-oblong, or linear-oblong, retuse, mucronate, more or less pilose beneath ; stipules semi-sagittate, more or less dentate ; flowers axillary, mostly in pairs, subsessile. *Beck*, *Bot. p.* 89.

CULTIVATED VICIA. *Vulgò*— Common Vetch, Tare.

Gallicè—La Vesce. *Germ.*—Die Futterwicke. *Hisp.*—Alverjana.

Root annual. *Stem* 1 to 3 feet long, striate, more or less pubescent, mostly simple, procumbent, or climbing by tendrils. *Leaflets* 3 fourths of an inch to an inch and half long, & 1 or 2 lines to half an inch wide, varying from sublinear to ovate and obovate-oblong (the narrow ones often the longest), mostly truncate and retuse at apex ; *common petioles* an inch and half to 3 inches long, pinnate to the base, terminating in a long branching tendril ; *stipules* semi-sagittate, nerved, with unequal acuminate teeth, somewhat ciliate, often marked with a dark spot near the base. *Flowers* mostly in pairs, sometimes solitary, axillary, subsessile. *Calyx* tubular, nerved, somewhat pilose ; *segments* as long as the tube, nearly equal, linear-lanceolate, nerved, ciliate. *Corolla* pale violet-purple, about half an inch long. *Style* short ; *stigma* bearded. *Legume* an inch to an inch and half long, compressed, torulose, reticulate, minutely pilose. *Seeds* orbicular, subcompressed, dark brown.

Hab. Cultivated grounds: not common. *Fl.* June—July. *Fr.* August.

Obs. This is occasionally to be met with ; but certainly, I think, not a native, here. Three or four additional species are enumerated in the U. States.

347. ERVUM. *L.* *DC. Prodr.* 2. *p.* 366.

[The *Latin* name for a species of Vetch, or Tare.]

Calyx 5-parted ; segments lance-linear, acute, nearly equal, about as long as the corolla. *Stigma* glabrous. *Legume* oblong, 2 to 4-seeded

1. E. LENS, L. *Stem erect, branching ; leaflets elliptic-oblong, somewhat pilose ; stipules obliquely ovate-lanceolate, ciliate ; pedun-*

cles 2 or 3-flowered; legumes broad, short, finely reticulated, smooth, 2-seeded; seeds lenticular. DC. Prodr. 2. p. 366.

Cicer Lens. Willd. Sp. 3. p. 1114. Vulgè—*Lentil.*

Gallicè—*La Lentille.* Germanicè—*Die Linse.* Hispanicè—*Lenteja.*

Root *annual.* Stem 6 *to* 12 *inches high, somewhat* 4-*angled, slightly pubescent, branched.* Leaflets *in* 3 *to* 6 *or* 8 *pairs, half an inch to near an inch long, and* 1 *or* 2 *lines to* 1 *third of an inch wide, elliptic-oblong, often rather acute at each end, more or less pubescent;* common petioles 1 *to* 2 *inches long, terminating in a subsimple tendril;* stipules *obliquely ovate-lanceolate, nerved, pubescent and ciliate.* Peduncles *half an inch to an inch long, axillary, pubescent,* 2 *or* 3 *flowered;* pedicels 2 *or* 3 *lines long.* Calyx *pilose;* segments *rather longer than the corolla, pilose-ciliate.* Corolla *white.* Legume *about half an inch long, and* 1 *third of an inch wide.* Seeds 2, *orbicular, compressed.*

Hab. *Gardens: not common.* Fl. *June—July.* Fr. *August.*

Obs. *Occasionally cultivated as a culinary vegetable; but is not likely to come into general use.*

2. E. HIRSUTUM, *L.* Stem slender, diffuse, scandent; leaflets cuneate-linear, emarginately truncate, mucronate; stipules lance-subulate; peduncles 3 to 6-flowered; legumes oblong, obliquely truncate, hirsute, 2-seeded; seeds subglobose. *Beck, Bot. p.* 89.

Vicia Mitchelli. *Ell. Sk.* 2. *p.* 224. Also, *DC. Prodr.* 2. *p.* 360.

HIRSUTE ERVUM.

Root annual? *Stem* 2 to 3 feet long, very slender, angular and striate, slightly pubescent, branching, and climbing by tendrils. *Leaflets* numerous (8 to 16 or 20), 1 third to 2 thirds of an inch long, and scarcely a line wide, sublinear, inclining to cuneate, truncate or retuse at apex, mucronate, often appearing somewhat tridentate, smoothish; *common petioles* 1 to 2 inches long, terminating in a slender branching tendril; *stipules* narrow, entire, or often cleft, forming a slender subulate diverging segment on one side. *Peduncles* half an inch to an inch long, pubescent, axillary, 3 to 6-flowered at summit. *Calyx* pilose; *segments* rather shorter than the corolla, subulate. *Corolla* bluish white. *Legume* scarcely half an inch long, and about 2 lines wide, obliquely truncate, torulose, hirsute, 2-seeded. *Seeds* orbicular, somewhat compressed, reddish brown (variegated, *DC.*).

Hab. Schuylkill, at Black Rock: rare. *Fl.* May—June. *Fr.* July.

Obs. Collected by Miss A. KIMBER, in 1834. It is a rare plant, here; and I suspect is not indigenous. It is doubtful whether there are any native species in the U. States.

348. PISUM. *L. Nutt. Gen.* 594.

[The *Latin* name for the Pea.]

Calyx-segments foliaceous; the 2 upper ones shorter. *Vexillum* large, reflexed. *Style* compressed, keeled, villose on the upper margin. *Legume* oblong, sub-compressed. *Seeds* numerous, globose, with an orbicular *hilum.*

1. P. SATIVUM, L. *Leaflets ovate, entire; stipules ovate, semi-sagittate, dentate at base; peduncles 2 or many-flowered; legumes subcarnose.* DC. Prodr. 2. p. 368.

CULTIVATED PISUM. Vulgè—*Pea, Garden Pea.*

Gallicè—*Pois Cultivée.* Germ.—*Die Erbse.* Hisp.—*Guisánte.*

Plant smooth and glaucous. Root *annual.* Stem 18 *inches to* 4 *feet long, somewhat branching, climbing by tendrils.* Leaflets *usually* 4, 1 *to* 2 *or* 3 *inches long, and* 3 *fourths of an inch to near* 2 *inches wide, more or less ovate, often rhomboid, rather obtuse, mucronate;* common petioles 2 *to* 4 *or* 5 *inches long, stout, terete, naked below, terminating in long branching tendrils;* stipules *rather larger than the leaflets, produced at base on one side, and dentate or crenate on that side.* Peduncles *axillary,* 1 *or* 2 *to* 6 *inches long, with* 2 *or more flowers at summit.* Calyx *nerved and veined;* segments *lance-oblong, acuminate.* Corolla *white, sometimes tinged with purple.* Style *reflexed.* Legume *about* 2 *inches long, subterete.*

Hab. *Gardens, and Lots: common.* Fl. *June—July.* Fr. *July—August.*

Obs. *Several* varieties *of this are cultivated,—chiefly for the* young seeds, *which afford a favorite dish, at table. There is one species given as a native of the U. States,—though its generic character has been doubted.*

5. Phaseolus Tribe. *Legume* many-seeded, dehiscent. *Leaves* not cirrhose; the primordial ones opposite. Phaseoleæ. *DC.*

349. AMPHICARPÆA. *DC. Prodr. 2. p. 383.*

[Gr. *Amphi*, double, & *Karpos*, fruit; producing fruit both above & under ground.]

Calyx tubular-campanulate, 4-toothed, naked and slightly gibbous at base. *Petals* oblong; vexillum broader, incumbent, subsessile. *Ovary* stipitate, the stipe invested at base with a small tubular sheath; *style* filiform, smooth; *stigma* capitate. *Legume* compressed, stipitate, 1 to 4-seeded.

1. A. monoica, *DC.* Stem volubile, pilose; leaves trifoliate; leaflets ovate, smoothish; cauline racemes pendulous, with the flowers clustered, petaliferous and mostly abortive; radical peduncles bearing sub-solitary apetalous fertile flowers. *DC. l. c.*

Amphicarpa. *Ell. Nutt. Torr. Beck,* &c.

Glycine monoica. *Willd. Sp.* 3. *p.* 1025. *Mx. Am.* 2. *p.* 64. *Pers. Syn.* 2. *p.* 299. *Ait. Kew.* 4. *p.* 296. *Muhl. Catal. p.* 64. *Pursh, Am.* 2. *p.* 485. *Bart. Phil.* 2. *p.* 83. *Bigel. Bost. p.* 276. *Lindl. Ency. p.* 618.

Also? G. comosa. *Willd. Sp.* 3. *p.* 1058. *Pers. Syn.* 2. *p.* 309. *Muhl. l. c. Pursh, Am.* 2. *p.* 486. *Lindl. l. c.*

Phaseolus, *Sub-genus* Amphicarpa. *Eat. Man. p.* 259.

Monoicous Amphicarpæa.

Root perennial, *Ell. Torr. Beck,* &c. (annual. *Willd. Muhl. Bigel. DC.* &c.). *Stem* 3 to 6 or 8 feet long, slender, angular, sparingly branched, volubile and climbing over shrubs, &c. retrorsely pilose, (sometimes densely clothed with spreading hairs). *Leaflets* 1 to 2 or 3 inches long, and 3 fourths of an inch to 2 inches wide, more or less sprinkled with hairs (sometimes quite hairy when young), ovate, acute, the terminal ones often somewhat rhomboid, and the lateral ones mostly obliquely ovate; *common petioles* 1 to 3 or 4 inches long; *stipules* oblong-ovate, striate-nerved, smoothish, or sometimes pilose. *Racemes* axillary,—the *upper cauline* ones mostly pendulous, often branched, on *peduncles* half an inch to near 3 inches long, with the *flowers* clustered, pedicellate, in pairs from the axils of broad rhomboid-ovate obtuse *bracts*,—the *peduncles* from near the *base of*

the stem, 2 to 8 or 10 inches long, filiform, often branching, and minutely *bracteate* near the middle, retrorsely pubescent, mostly with a solitary legume at the extremity, which is buried in the loose earth, or under old leaves, near the root. *Calyx* tubular, a little gibbous at base on the upper side, pilose, 4-cleft; *segments* lance-ovate, acuminate, nearly equal. *Corolla* pale purple tinged with violet (often nearly white). *Cauline legumes* about an inch long, and 1 fourth of an inch wide, subfalcate, acuminate at each end, stipitate, the stipe with a short cylindric sheath at base; *valves* smoothish, the sutures hirsute; *seeds* 3 or 4, sub-reniform, dark purple. *Hypogæan legumes* about 1-third of an inch long, compressed, sub-orbicular, or pyriform-obovate, sessile, hirsute, tawny, 1-seeded; *seed* large orbicular, compressed, of a motley reddish-brown.

Hab. Woodlands, and thickets: frequent. *Fl.* August. *Fr.* September—October.

Obs. The cauline petal-bearing flowers of this curious plant are generally abortive; but I have occasionally found clusters of perfect legumes. There is one other species in the U. States, viz. the A. *sarmentosa*;—which, from my ignorance of the plant, and at the suggestion of a Botanical friend, I inserted, with a mark of doubt, in my former Catalogue. On re-examining my specimen, since the *Desmodiums* of this work were printed, I have the mortification to find that my supposed A. *sarmentosa* is neither more nor less than *Desmodium pauciflorum!*

350. APIOS. *Boerh. Nutt. Gen.* 614.

[Greek, *Apios*, a Pear; in allusion to its pyriform tubers.]

Calyx bibracteate at base, campanulate, with 4 rounded obsolete teeth, and 1 longer acute tooth under the keel. *Keel* linear, falcate, reflecting the apex of the vexillum. *Ovary* shortly stipitate, the stipe with a minute sheath at base; *stigma* emarginate. *Legume* coriaceous, many-seeded.

1. A. TUBEROSA, *Mœnch.* Stem volubile; leaves odd-pinnate; leaflets ovate-lanceolate. *Beck, Bot. p.* 91.
Glycine apios. *Willd. Sp.* 3. *p.* 1067. *Mx. Am.* 2. *p.* 63. *Pers. Syn.* 2. *p.* 301. *Ait. Kew.* 4. *p.* 298. *Muhl. Catal. p.* 64. *Bigel. Bost. p.* 277. *Lindl. Ency. p.* 618.
Phaseolus, *Sub-genus* Apios. *Eat. Man. p.* 259.
TUBEROUS APIOS. *Vulgò*—Ground nut. Wild Bean.

Root perennial, producing oval tubers half an inch or more in diameter, at the base of the stem, and moniliform on the principal fibres. *Stem* 4 to 6 or 8 feet long, slender, striate, slightly scabrous and hairy, sparingly branched, volubile and climbing. *Leaflets* 3 to 7 (mostly in fives), an inch and half to 3 inches long, and half an inch to an inch wide, ovate-lanceolate, acute, or subacuminate, subcoriaceous, reticulately veined, slightly scabrous and sprinkled with hairs, on short hairy petioles; *common petioles* 1 to 2 inches long below the leaflets; *stipules* subulate-linear. *Racemes* axillary, oblong, dense flowered, an inch or inch and half long, and about an inch in diameter, on *peduncles* half an inch to an inch in length; *pedicels* 2 or 3 lines long, with small linear *bracts* at base. *Calyx* smooth, with 2 small subulate very caducous *bracts* at base. *Corolla* a dingy brownish purple, with tinges of green,—the keel linear, recurved, pushing back the apex of the vexillum. *Legume* about 2 inches long, subfalcate, acuminate, smoothish. *Seeds* reniform.

Hab. Low grounds; thickets, and fence-rows: frequent. *Fl.* Aug. *Fr.* Sept-Octo

Obs. The *flowers* of this are rather handsome, and pleasantly fragrant. The *tubers*, on the roots, are said to be esculent and nutritious,—for which Prof. *Eaton* thinks the plant is worthy of culture. It is the only species of the genus.

351. PHASEOLUS. *L. Nutt. Gen.* 612.

[Latin, *Phaselus*, a boat; from the keel-like form of the legumes.]

Calyx bibracteate at base, campanulate, sub-bilabiate; upper lip bifid, or emarginate, lower one trifid. *Keel*, with the *stamens* and *style*, spirally twisted, or rarely incurved. *Ovary* stipitate, the stipe sheathed at base. *Legume* compressed and falcate, or cylindric, many-seeded. *Seeds* reniform, with an oval-oblong *hilum*. *Leaves* trifoliate.

1. P. PERENNIS, *Walt.* Stem volubile, pubescent; leaflets ovate, acuminate, 3-nerved, adhesively scabrous beneath; racemes often in pairs, or sub-paniculate, longer than the leaves; calyx-bracts minute; legumes broad, falcate, mucronate. *Beck, Bot. p.* 91.
P. paniculatus. *Mx. Am.* 2. *p.* 60. Also, *Pers. Syn.* 2. *p.* 295. *Also*, Dolichos polystachyos. *Willd. Sp.* 3. *p.* 1049. *Pers. Syn.* 2. *p.* 298. *Muhl. Catal. p.* 64.

PERENNIAL PHASEOLUS. *Vulgò*—Wild Kidney-Bean.

Root perennial. *Stem* 4 to 6 or 8 feet long, slender, striate, pubescent, branching, climbing, or more commonly trailing. *Leaflets* an inch and half to 4 inches long, and 1 to 3 inches wide, ovate, often subcordate at base, more or less acuminate, scabrous and remarkably adhesive beneath, the lateral ones obliquely ovate, or enlarged on the outside towards the base; *common petioles* 1 to 3 or 4 inches long, pubescent: *stipules* small, lanceolate. *Racemes* slender, loose-flowered; *peduncles* 2 to 6 or 8 inches long, often 2 or 3 in the same axil; *pedicels* mostly in pairs, 2 to 4 lines long, with 3 small unequal *bracts* at base, the middle or lower bract larger, lance-ovate, acuminate, nerved, pubescent. *Calyx* smoothish, with minute *bracts* at base; *segments* short, broad, obtuse. *Corolla* purple, with tinges of violet; vexillum large; keel compressed, and spirally twisted, pale green. *Legume* an inch and half to 2 inches long, and about 1 third of an inch wide, falcate, stipitate, smooth, pendulous. *Seeds* reniform, compressed, dark purple.

Hab. Rocky woodlands: not very common. *Fl.* July—Aug. *Fr.* Sept—Octo.

2. P. VULGARIS, L. *Stem volubile, sub-pubescent; leaflets ovate, acuminate; racemes solitary, pedunculate, shorter than the leaves; calyx-bracts as long as the calyx; legumes nearly straight, sub-torulose, long-mucronate; seeds reniform, subcompressed.* Willd. Sp. 3. p. 1030. [*Bean.*

COMMON PHASEOLUS. Vulgò—*Kidney Bean. String Bean. Pole* Gallicè—*Haricot.* Germ.—*Die Gemeine Bohne.* Hisp.—*Fasoles.*

Root *annual.* Stem 4 *to* 6 *or* 8 *feet long, slightly pubescent, branching, volubile and climbing, always twining* against *the sun, or W. S. E.* Leaflets 2 *to* 4 *or* 5 *inches long, and an inch and half to* 3 *inches wide, acute, or sometimes long-acuminate, more or less scabrous-pubescent;* common petioles 1 *to* 5 *or* 6 *inches long, stout:* stipules *oblong-ovate, spreading, or reflexed.* Racemes *solitary, on stout* peduncles 1 *to* 3 *or* 4 *inches long;* pedicels 1 *third to* 2 *thirds of an inch long, mostly in pairs, with* 3 *unequal* bracts *at base, the middle bract larger, ovate-lanceolate.* Calyx *somewhat pilose, with* 2 *ovate nerved* bracts *at base as long, or longer than the calyx.* Corolla *mostly white, rather large.* Legume 3 *to* 6 *inches long, and* 1 *third to* 2 *thirds of an inch wide, more or less compressed, minutely pubescent.* Seeds *more or less reniform, whitish, or of various colors.*

Hab. *Gardens, and Lots: common.* Fl. *July—August.* Fr. *September.*

Obs. *Generally cultivated for the table,—both* seeds *and* legumes *being eaten.*

The P. nanus, Bush, *or* Bunch Bean,—*with short erect stem, more acuminate leaflets, and larger bracts,—is supposed to be only one of the many* varieties, *produced by long culture.*

3. P. LUNATUS, L. *Stem volubile, smoothish; leaflets deltoid-ovate, acute; racemes subpedunculate; calyx-bracts shorter than the calyx; legumes broad, compressed, scymitar-form, somewhat lunate; seeds compressed.* Willd. Sp. 3. p. 1031.

LUNATE PHASEOLUS. Vulgò—*Lima Bean.*

Root *annual.* Stem 6 *to* 8 *feet long, smoothish, branching, volubile and climbing.* Leaflets 2 *to* 3 *or* 4 *inches long, and* 1 *to* 2 *or* 3 *inches wide, acute, or sub-acuminate, nearly smooth, slightly rugose-veined beneath, the terminal ones deltoid-ovate, the lateral ones much and obliquely dilated on the outer side at base;* common petioles 2 *to* 5 *or* 6 *inches long, rather slender;* stipules *small, lance-ovate.* Racemes *loose-flowered, on* peduncles *about* 2 *thirds of an inch long (often a pedicel at the base of the common peduncle);* pedicels 1 *third to half an inch long, with small ovate* bracts *at base.* Calyx *somewhat pilose, with* 2 *oval-oblong* bracts *at base shorter than the calyx.* Corolla *greenish white, small;* vexillum *roundish, emarginate, recurved, greenish.* Legume 2 *to* 3 *inches long, and about an inch wide, compressed, somewhat lunate, smooth,* 3 *or* 4 *seeded.* Seeds *large, much compressed.*

Hab. *Gardens, and Lots: frequent.* Fl. *July—August.* Fr. *September—Octo.*

Obs. *Cultivated for the table,—the large* seeds, *only, being eaten.*

4. P. VEXILLATUS, *L.?* Stem volubile, mostly trailing, pilose; leaflets deltoid-oblong, and ovate-oblong; racemes few-flowered, subcapitate, on very long peduncles; vexillum very large; legumes linear, pilose. *Beck, Bot. p.* 92.

P. peduncularis. *Bart. Phil.* 2. *p.* 81.

P. helvolus. *Mx. Am.* 2. *p.* 60. *Muhl. Catal. p.* 64. *Hook? Am.* 1. *p.* 162. Also? *Willd. Sp.* 3. *p.* 1032. *Pers. Syn.* 2. *p.* 295. *Ait. Kew.* 4. *p.* 289. *Pursh, Am.* 2. *p.* 470. *DC. Prodr.* 2. *p.* 395. *Lindl. Ency. p.* 614. *Beck, l. c.*

P. *Sub-genus* Strophostyles. *Eat. Man. p.* 258—9.

Also, Glycine umbellata. *Willd. Sp.* 3. *p.* 1058. *Pers. Syn.* 2. *p.* 300. *Muhl. l. c.*

Also, G. peduncularis. *Muhl. l. c.*

Dolichos vexillatus. *Nutt. Gen.* 2. *p.* 112. Also? D. helvolus. *Nutt.*

Strophostyles peduncularis. *Ell. Sk.* 2. *p.* 230.

S. helvolus. *Torr. Comp. p.* 270. Also? *Ell. l. c.*

VEXILLATE, OR BANNERED PHASEOLUS.

Root perennial, *Muhl. Torr. Beck,* &c. (annual, *Willd.* &c.). *Stem* 2 to 4 feet long, slender, angular-striate, retrorsely pilose, branching, volubile and climbing, or more usually trailing. *Leaflets* 1 to 2 inches long, and 1 fourth of an inch to an inch wide, varying from sublinear to deltoid and ovate-oblong, rounded and often ovately dilated at base, tapering to the apex which is mostly rather obtuse, sometimes obscurely sinuate on the margin towards the base, reticulately veined, more or less pilose with appressed hairs; *common petioles* half an inch to an inch and half long; *stipules* lance-oblong, nerved. *Racemes* subcapitate, 3 to 5 or 7-flowered, at the summit of solitary axillary *peduncles,*—which are 3 to 6 or 8 inches long, angular and slightly pilose, more densely and retrorsely pilose at the base of the raceme; *pedicels* short, with small lance-ovate *bracts* at base. *Calyx* pilose

with 2 lance-oblong nerved *bracts* at base, shorter than the calyx; *segments* ovate, except the lower one, which is subulate-lanceolate, and longer than the others. *Corolla* pale purple, with deeper tinges of violet, especially on the keel and wings; *vexillum* orbicular, large (half an inch to 3 quarters in diameter); *wings* oblong, rather small; *keel* nearly as long as the vexillum, incurved (spiral, *Ell. sed qu?*). *Ovary* lance-linear, falcate, pilose; *style* bearded at summit. *Legume* an inch and half to 2 inches long, narrow, terete-linear, sub-falcate, pilose with appressed hairs. [*Seeds* woolly. *Ell. DC.* &c.]

Hab. North side of the County: rare. *Fl.* August. *Fr.*

Obs. This was collected, the present season (1836), near the Schuylkill, on the Northern side of the County, by Mr. JOSEPH RINEHART, an active young Botanist, whose industry has added several plants to this Flora. I have not had an opportunity to see the mature fruit. One or two additional species are enumerated in the U. States.

352. LUPINUS. *L. Nutt. Gen.* 592.

[Latin, *Lupus*, a wolf; because it was supposed to devour the soil.]

Calyx deeply bilabiate. *Vexillum* with the margins reflexed; *keel* acuminate. *Stamens* monadelphous; *anthers*, 5 roundish, and 5 oblong. *Style* filiform; *stigma* small, capitate, bearded. *Legume* oblong, obliquely torulose, coriaceous, many-seeded.

1. L. PERENNIS, *L.* Leaves digitate; leaflets obovate-oblong, or oblanceolate, rather obtuse, mucronate, smoothish; flowers alternate, pedicellate, bracteate; calyx with minute lateral segments, or bracts; upper lip emarginate, the lower one entire. *Beck, Bot. p.* 92. ICON, *Bart. Am.* 2. *tab.* 38.

PERENNIAL LUPINUS. *Vulgò*—Wild Lupin.

Root perennial, creeping. *Stem* 9 to 18 inches high, herbaceous, erect, or decumbent, somewhat branching, striate-angular, pubescent. *Leaflets* 8 or 9, digitately arranged, 1 to 2 inches long, and 1 fourth to 2 thirds of an inch wide, tapering almost to a petiole at base, pilose beneath, smoothish above; *common petiole* 1 or 2 to 4 or 5 inches long, pubescent; *stipules* subulate, pilose. *Racemes* terminal, 3 to 6 inches long, on a naked *peduncle* 2 to 4 inches in length; *pedicels* 1 third to half an inch long, slender, villose; *bracts* subulate-lanceolate, villose, nearly as long as the pedicels, caducous. *Calyx* villose; upper lip emarginate, lower one longer, lanceolate, keeled; lateral segments, or *bracts* very minute, subulate. *Corolla* purplish blue, with shades of dark violet; *vexillum* with the margins reflexed; *wings* broad, rhomboid-ovate, cohering at apex; *keel* acuminate, ciliate on the margins. *Legume* about an inch and half long, and 1 third of an inch wide, somewhat compressed, mucronate, obliquely torulose, hirsute, of a dark tawny color. *Seeds* obovoid, slightly compressed, smooth, speckled, or variegated with whitish and dark brown.

Hab. Woodlands; on the Valley hills: frequent. *Fl.* June. *Fr.* July.

Obs. This ornmental plant is frequent on the Valley hills,—but rather scarce elsewhere, in this County. Five or six additional species occur in the U. States; and Prof. *Hooker* enumerates 20 in British America.

DIV. II. RECTEMBRIÆ. *The radicle and cotyledons straight.*

SUB-ORD. IV. CÆSALPINEÆ. *Sepals* and *Petals* imbricated in æstivation.

10. Cassia Tribe. *Stamens* distinct. Cassieæ. *DC.*

353. CASSIA. *L. Nutt. Gen.* 398.

[An ancient name of obscure etymology.]

Sepals 5, scarcely united at base, somewhat unequal. *Petals* 5, unequal. *Stamens* mostly 10, free, unequal,—the 3 lower ones longest, rostrate,—4 middle ones short, straight,—3 upper ones shortest, sometimes with abortive deformed anthers; *anthers* opening at apex. *Ovary* stipitate, often curved. *Legume* many-seeded. *Leaves* even-pinnate; the common petiole often glanduliferous.

1. C. marilandica, *L.* Stem erect; leaflets in 7 to 9 pairs, ovate-oblong, mucronate, nearly equal; gland near the base of the petiole obovoid; racemes axillary, many-flowered, pedunculate, shorter than the leaves; legumes compressed, linear, arcuate, hirsute, finally smoothish. *Beck, Bot. p.* 94.

Maryland Cassia. *Vulgò*—Wild Senna.

Root perennial. *Stem* erect, 3 to 4 feet high, herbaceous, branching, somewhat pilose. *Leaflets* 1 to 2 inches long, and 1 third to 3 fourths of an inch wide, ovate-oblong, often nearly elliptic, mucronate, smooth, slightly ciliate, opposite (rarely with a terminal odd one), on short petioles; *common petioles* 1 to 2 inches long below the lowest pair of leaflets, sparingly pilose, with an obovoid subsessile *gland*, on the upper side, half an inch to an inch and half from the base,—the gland sometimes didymous,—and often accompanied with a leaflet, or situated between the lowest pair of leaflets; *stipules* subulate-linear, near half an inch long, pilose-ciliate. *Racemes* pedunculate, in the upper axils, forming a sort of terminal leafy panicle; peduncles about half an inch long, stout, pilose; *pedicels* half an inch to 3 quarters in length, each with a lance-linear pilose-ciliate *bract* at base. *Sepals* oblong, obtuse, smoothish or sparingly pilose, minutely ciliate, greenish-yellow. *Petals* yellow, often becoming a dead white, veined, obovate-cuneate, about twice as long as the sepals,—the 3 upper ones erect, the 2 lower ones depending, diverging. *Stamens* unequal,—3 lower ones longest, 3 upper ones shortest, with flatted abortive anthers, 4 in the middle above the ovary; *anthers* dark greenish-brown, finally nearly black. *Ovary* declined, villose. *Legume* 3 or 4 inches long, and about 1 third of an inch wide, much compressed, somewhat curved, linear, often sinuate on the margins, or with partial contractions, hairy, finally nearly smooth. *Seeds* numerous, compressed, ovate-oblong, separated by transverse partitions.

Hab. Low grounds; banks of rivulets: frequent. *Fl.* August. *Fr.* Sept—Octo.

Obs. This is quite ornamental, when in flower, and is often introduced into gardens. The *leaves* afford a tolerable substitute for the *Senna*, of the Shops,—which is also a species of Cassia.

2. C. nictitans, *L.* Stem oblique, or procumbent; leaflets in many pairs, oblong-linear, obtuse, mucronate; gland on the petiole cup-shaped, sub-pedicellate; racemes lateral, super-axillary, few-flowered, sub-sessile; stamens 5, nearly equal; legumes hirsute. *Beck, Bot. p.* 94.

Twinkling Cassia. *Vulgò*—Wild Sensitive Plant.

Root annual. *Stem* 6 to 12 or 15 inches long, mostly oblique, slender, branching, roughish-pubescent. *Leaflets* in 6 to 20 pairs, about half an inch long, and 1 line wide, nearly linear, obtuse, mucronate, smooth, oblique at base, subsessile; *common petioles* about 1 third of an inch long below the lower pair of leaflets, hirsute with a cup-like or truncate *gland* on the upper side; *stipules* obliquely ovate-lan-

ceolate, cuspidate, nerved, ciliate. *Racemes* 2 or 3-flowered, rather above the axils of the leaves, subsessile; *pedicels* short, with subulate-lanceolate *bracts* at base, and near the middle. *Sepals* (sometimes 4, *Torr.*), ovate-lanceolate, acuminate, somewhat pilose externally along the middle, yellowish. *Petals* yellow, obovate. *Stamens* 5, all fertile; *anthers* large, truncate, purplish. *Ovary* villose; *style* short, thick, recurved; *stigma* obliquely truncate. *Legume* an inch to an inch and half long, and 2 or 3 lines wide, much compressed, sublinear, obliquely truncate, or with a short abrupt oblique acumination, hirsute with appressed hairs.

Hab. Sandy banks; roadsides, &c. frequent. *Fl.* August. *Fr.* October.

3. C. CHAMÆCRISTA, *L.* Stem erect, or decumbent; leaflets in many pairs, linear-oblong, obtuse, mucronate; gland on the petiole cup-shaped, or peltate, sessile; racemes lateral, super-axillary, few-flowered, fasciculate, subsessile; stamens 10, unequal; legumes sparsely hirsute. *Beck, Bot. p.* 94.

Vulgò—Sensitive Pea. Partridge Pea. Magothy-bay Bean.

Root annual. *Stem* 1 to 2 feet high, rather erect, terete, firm and subligneous at base, much branched, pubescent, often purplish. *Leaflets* in 8 to 10 or 12 pairs, half an inch to 3 quarters in length, and 2 to 3 lines wide, obtuse, oblique at base, smooth, minutely ciliate-serrulate, subsessile; *common petioles* about 1 third of an inch long below the lower pair of leaflets, hirsute, with a depressed or cup-like *gland* on the upper side; *stipules* obliquely ovate-lanceolate with a long tapering point, nerved, ciliate. *Flowers* larger than in the preceding, in lateral subsessile fascicles above the axils of the leaves, often in pairs, sometimes 3 or 4; *pedicels* half an inch to 3 quarters in length, hairy, bracteate at base, and near the flower; *bracts* subulate-lanceolate. *Sepals* ovate-lanceolate, with a subulate acumination, pilose externally along the middle, yellowish brown. *Petals* deep bright yellow, obovate, 2 or 3 of them with a purple spot at base. *Stamens* 10, unequal, all fertile; *anthers* very long, subsessile, 4 of them yellowish, and 6 purple. *Ovary* villose; *style* long, rather slender, recurved; *stigma* small. *Legume* about 2 inches long, and 1 fourth to 1 third of an inch wide, compressed, sublinear, with a short abrupt oblique acumination, hairy along the sutures, sparingly so on the valves.

Hab. Chestnut hill, near Pughtown: rare. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. This resembles the preceding; but is a stouter, and more erect, showy plant. It was detected in the above locality, the present season (1836), by Mr JOSEPH RINEHART. Six or seven additional species, of this very extensive genus, have been found in the U. States.

354. CERCIS. *L. Nutt. Gen.* 402.

[Greek, *Kerkis*, a weaver's shuttle; from the form of the legume.]

Calyx obtusely 5-toothed, gibbous at base. *Corolla* somewhat papilionaceous; *petals* all distinct, unguiculate, the *wings* larger. *Stamens* free, unequal. *Ovary* substipitate. *Legume* oblong, much compressed, 1-celled, many-seeded, the upper suture margined. *Seeds* obovate. *Leaves* simple, cordate.

1. C. CANADENSIS, *L.* Leaves orbicular-cordate, acuminate, villose in the axils of the nerves beneath; flowers fasciculate; legumes shortly stipitate. *Beck, Bot. p.* 94.

CANADIAN CERCIS. *Vulgò*—Red bud. Judas tree.

A small *Tree*, 15 to 20 or 30 feet high, with somewhat geniculate branches, and a greyish brown dotted bark. *Leaves* 3 or 4 inches long, and rather wider than long, cordate, with a short abrupt acumination, entire, smooth, strongly 7-nerved

beneath, and more or less villose in the axils of the nerves; *petioles* 1 to 2 inches long; *stipules* lance-ovate, small, membranaceous, smooth, deciduous. *Flowers* in numerous small lateral fascicles on the limbs, and often on the trunk, appearing before the leaves; *pedicels* about half an inch long, filiform, smooth, 4 to 6 or 8 from a bud. *Calyx* subcampanulate, gibbously dilated, smooth; *segments* short, rounded, very minutely ciliate. *Corolla* bright purple; *vexillum* small, covered by the wings; *keel* of 2 distinct petals, larger than the wings. *Ovary* linear, tapering gradually into a style; *stigma* simple. *Legume* about 3 inches long, and half an inch wide, oblong, subcoriaceous, smooth, much compressed, acute at each end, the upper suture with a winged margin. *Seeds* obovate, or oval, somewhat compressed, dark brown.

Hab. Banks of the Schuylkill: not common. *Fl.* April. *Fr.* June.

Obs. This little tree is much admired for its clusters of small flowers,—which clothe the limbs in purple before the leaves appear. The flowers are acid to the taste. It is the only species in the U. States.

CLASS XVII. SYNGENESIA.*

I. CYNARA TRIBE. Heads *ovoid, mostly homogamous (sometimes dioicous),—when heterogamous, with the florets of the circumference always in a single series, rarely pistillate.* Corolla *tubular, mostly regular, 5-cleft.* CYNAREÆ. *Lessing.*

Sub-Tribe 1. CENTAURIEÆ. *Akenes* not beaked, smoothish when the areola is terminal. *Pappus* bristly, the base invested by a prominent margin which surrounds the epigynous disk; rarely wanting. *Involucre* of many series, with the leaflets distinct. *Receptacle* bristly-paleaceous.

355. CENTAUREA. *L. Nutt. Gen.* 694.

[From the *Centaur*, Chiron; who, it is said, cured his wound with the plant.]

Heads heterogamous. *Involucre* imbricated; *leaflets* scarious, or variously serrate, on the margin. *Corolla* of the neutral or ray florets, when present, 5-parted, funnel-form, larger than the others. *Filaments* papillose. *Pappus* in many series, pilose. *Akenes* compressed, with a lateral areola. *Receptacle* bristly-paleaceous.

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* The plants of this Class constitute a very large *natural* Family (*Nat. Ord.* 186. *Lindl.* COMPOSITÆ.). They are generally *herbaceous* (rarely *shrubby*), with the *leaves* alternate, or opposite, without stipules, and usually simple; the apparently large *flowers* composed of numerous *florets*, which are monoclinous, or diclinous, collected in dense *heads* upon a *common receptacle*, and surrounded by a many-leaved *involucre*,—the florets often with chaffy *bracts* at base, commonly called *paleæ of the receptacle; calyx* superior, or rather closely adnate to the ovary,—the *limb* membranous, divided into chaffy scales, bristles, or hairs, crowning the ovary, and called *pappus*, often obsolete, or wanting; *corolla* monopetalous, usually deciduous, ligulate, or funnel-form,—in the latter case mostly 5-lobed, with a valvate æstivation; *stamens* 5, alternate with the lobes of the corolla, the *anthers* cohering and forming a cylindrical tube embracing the style; *ovary* inferior, 1-celled, with a single erect ovule; *style* simple, mostly bifid at summit; *fruit* a small dry indehiscent pericarp (called an *akene*), crowned with the limb of the calyx, often rostrate, rendering the pappus apparently stipitate; *seed* solitary.

Instead of using the *Linnæan Orders* of this Class, I have attempted to follow the arrangement of *Lessing's Synopsis Generum Compositarum*,—grouping the Genera into *Tribes*.

1. C. CYANUS, *L.* Leaves linear-lanceolate, entire, the lower ones dentate at base; leaflets of the involucre serrate. *Willd. Sp.* 3. *p.* 2291.

Vulgò—Blue-bottle. Ragged Robin. Blue-bonnets, *of the Scotch.*

Gallicè—Bluet. *Germanicè*—Die Kornblume. *Hispanicè*—Ciáno.

Root annual. *Stem* 18 inches to 3 feet high, much branched, striate-angled, clothed with a cinereous cobweb-like villus. *Leaves* 2 to 6 inches long, and 2 or 3 lines to half an inch wide, acute, sessile, hoary-villose, or lanuginous, especially on the under surface,—the upper ones entire, the lower ones dentate, or sometimes pinnatifid, near the base. *Heads* roundish-ovoid, terminal, pedunculate; *involucre* imbricated, the lower or outer leaflets ovate, serrate, the inner ones longer, lanceolate, scarious and entire on the margin, serrate at apex; *florets* of the centre, or disk, perfect, regular, with a slender tube, mostly purplish, with darker colored anthers, those of the circumference obsoletely pistillate, larger, spreading or recurved, funnel-form, with a long tube, blue, or sometimes varying to purplish, and white. *Akenes* oblong, compressed, striate, pilose, with an opening, or cavity, on one side of the base (lateral *areola*); *pappus* of numerous rufous scabrous hairs of unequal lengths.

Hab. Gardens, and cultivated lots: not uncommon. *Fl.* July. *Fr.* August.

Obs. This species is frequent about gardens; and is becoming partially naturalized in some of our fields. Two or three others are said to be naturalized in the U. States,—and one very pretty native species has been found in the South, by Mr. *Nuttall.*

356. CARTHAMUS. *Gærtn. Less. Syn. p.* 8.

[Arabic, *qorthom*, to paint; from its coloring properties.]

Heads homogamous. *Involucre* imbricated; the exterior *leaflets* foliaceous. *Florets* all tubular, perfect. *Filaments* smooth. *Pappus* 0. *Akenes* 4-angled, 4-ribbed, with a lateral areola. *Receptacle* bristly-paleaceous.

1. C. TINCTORIUS, Willd. *Stem glabrous; leaves lance-ovate, entire, spinose-denticulate.* Willd. Sp. 3. p. 1706.

DYER'S CARTHAMUS. Vulgò—*Saffron. Safflower.*

Gall.—*Safran bâtard.* Germ.—*Das Buerstenkraut.* Hisp.—*Cártamo.*

Root *annual.* Stem 1 *to* 2 *feet high, branching, striate, very smooth.* Leaves 1 *to* 3 *inches long, and half an inch to an inch and half wide, lance-ovate,* or *lance-oblong, spinose-cuspidate, spinulose on the margin, strongly and reticulately veined, smooth and shining, sessile and semiamplexicaul.* Heads *large; lower leaflets of the* involucre *foliaceous and lance-ovate at apex, narrowed and thicker at base.* Florets *of a deep reddish orange-color, with a long slender tube, and 5-parted limb.* Akenes *bald, or destitute of pappus.*

Hab. *Gardens: frequent.* Fl. *July.* Fr. *September.*

Obs. *Occasionally cultivated for the* florets; *which are used as a domestic dye-stuff,—and are also highly popular, among Nurses, as a remedy for various infantile complaints. There are no native species in the U. States.*

Sub-Tribe 2. CARDUINEÆ. *Akenes* not beaked, with the areola terminal. *Pappus* pilose, or plumose, the base not invested by a margin, often long, and deciduous. *Involucre* of many leaflets, distinct, and mostly spinose. *Receptacle* alveolate, or bristly.

357. ARCTIUM. *L.* *Nutt. Gen.* 636.

[Greek, *Arktos*, a bear; the involucres being rough like a bearskin.]

Heads homogamous. *Involucre* sub-globose; *leaflets* squarrose, uncinately incurved at apex. *Florets* all tubular, perfect. *Pappus* in many series, pilose, the hairs short, distinct at base, and caducous. *Akenes* compressed, ribbed, with the areola terminal. *Receptacle* bristly-paleaceous.

1. A. LAPPA, *L.* Leaves cordate-oblong, denticulate, petiolate; involucre smoothish. *Beck, Bot. p.* 171.

Lappa. *Less. Syn. p.* 8. *Vulgò*—Bur-dock.

Gallicè—Glouteron. *Germ.*—Die Klette. *Hisp.*—Bardána.

Root perennial? (biennial, *Willd.* &c.). *Stem* 2 to 4 or 6 feet high, paniculately branching, striate-sulcate, roughish-pubescent. *Leaves* alternate, petiolate, scabrous above, paler and lanuginous beneath; *radical* ones large (1 to 2 feet long, and 6 to 10 or 12 inches wide), cordate-oblong, acute, wavy on the margin, denticulate, or erosely dentate, sometimes pinnatifid; *cauline leaves* smaller, more or less ovate. *Heads* globose, or roundish-ovoid, half an inch to 3 quarters in diameter, on short peduncles, terminal and axillary; leaflets of the *involucre* subulate-lanceolate, keeled, minutely serrulate, smoothish, spreading, with the point incurved and hooked. *Florets* purple, with bluish anthers. *Akenes* compressed, angular, rugose, crowned with a short pilose scabrous pappus. Bristles of the *receptacle* smooth, longer than the akenes.

Hab. Fence-rows, and waste places: common. *Fl.* July—Sept. *Fr.* Sept—Octo.

Obs. The A. *Bardana*, of *Willd.* (A. *tomentosum*, *Pers.*) with an arachnoid-tomentose involucre, is thought to be only a *variety* of this. A variety has been observed here, occasionally, with pinnatifid leaves. The Bur-dock is known to every one; and although an introduced plant, has become a common and troublesome weed, on premises which are neglected. An infusion of the *root* is a popular remedy for colic; and the *leaves* are a favorite external application, in fevers, head ache, &c. It is the only species in the U. States—if not of the genus.

358. CARDUUS. *L.* *Nutt. Gen.* 638.

[The *Latin* name for the Thistle.]

Heads homogamous. *Involucre* tumid, ovoid, imbricated; *leaflets* mostly spinose. *Florets* all tubular, perfect. *Pappus* in many series, long, pilose, or plumose, united in a ring at base, deciduous. *Akenes* oblong, compressed, not ribbed. *Receptacle* bristly.

(§ 1. *Pappus pilose.* None of this section in the U. States.)

§ 2. *Pappus plumose.* (CNICUS. *Willd.* &c.)

* *Leaves all pinnatifid.*

1. C. LANCEOLATUS, *L.* Leaves decurrent, pinnatifid, hispid, the segments lanceolate, bifid, divaricate, spinose; leaflets of the involucre lanceolate, spreading. *Beck, Bot. p.* 175.

Cnicus lanceolatus. *Willd. and most of the Authors here quoted.*

LANCEOLATE CARDUUS. *Vulgò*—Common Thistle.

Gallicè—Chardon lancelé. *Germ.*—Die Distel. *Hisp.*—Cardo.

Root biennial. *Stem* 2 to 4 feet high, stout, erect, branching, striate-sulcate, hairy, winged by the decurrent leaves. *Leaves* 4 to 8 or 12 inches long, and 1 to 2 or 3 inches wide (the radical ones much larger than the cauline), prickly-hispid on the upper surface, lanuginous beneath. *Heads* terminal, erect, ovoid, about an inch in diameter; leaflets of the *involucre* lanceolate, sharply spinose at apex, connected by a cobweb-like villus. *Florets* purple, with yellowish anthers. *Akenes* small, compressed, obovate-oblong, smooth; *pappus* about an inch long, silky, plumose.

Hab. Pastures; along fence-rows, &c. common. *Fl.* June—July. *Fr.* July—Aug.

Obs. An introduced and troublesome weed,—delighting in a rich soil, and requiring some attention to keep it in subjection.

2. C. DISCOLOR, *Nutt.* Leaves sessile, linear-lanceolate, more or less deeply pinnatifid, smoothish and green above, densely hoary-tomentose beneath, the segments ciliate and spinose; leaflets of the involucre lance-ovate, appressed. *Beck, Bot. p.* 173.
Cnicus discolor. *Willd. Muhl. Florul. Cestr.* &c.

TWO-COLORED CARDUUS.

Root biennial. *Stem* 2 to 5 feet high, with rather slender spreading branches, striate-sulcate, somewhat pubescent with crisped membranous hairs. *Leaves* 3 or 4 to 12 or 15 inches long, deeply pinnatifid, the segments linear-lanceolate, and lance-oblong, cuspidate and spinose-ciliate,—the under surface bluish-white with a soft dense tomentum. *Heads* terminal, erect, ovoid-oblong, 1 to 2 inches long, and an inch or more in diameter; lower leaflets of the *involucre* lance-ovate, upper or inner ones linear-lanceolate, all appressed, somewhat arachnoid-villose, and terminating in slender spreading spines. *Florets* reddish purple, with whitish anthers.

Hab. Old fields; borders of thickets, &c. frequent. *Fl.* Aug-Sept. *Fr.* Sept-Octo.

3. C. PUMILUS, *Nutt.* Stem low and retrorsely pilose, few-flowered; leaves semi-amplexicaul, lance-oblong, pinnatifid, green on both sides, the segments irregularly lobed, spinose-ciliate and pointed with sharp spines; involucre large, the leaflets ovate-lanceolate, acuminate, appressed, terminating in a short spine. *Beck, Bot. p.* 173.
Cnicus pumilus. *Torr. Comp. p.* 282.
C. odoratus. *Muhl. Catal. p.* 70. *Bart. Phil. 2. p.* 95. *Florul. Cestr. p.* 85. *Eat. Man. p.* 100.

DWARF CARDUUS.

Plant pale greyish-green. *Root* biennial (perennial, *Muhl.*). *Stem* 1 to 2 feet high, stout, erect, or subdecumbent, sparingly branched, striate, hairy. *Leaves* 4 to 12 or 15 inches long, and 1 to 2 or 3 inches wide (the radical ones large), more or less hairy, densely pilose on the midrib beneath. *Heads* 1 to 3, terminal, roundish-ovoid, very large (1 to 2 inches in diameter), often with pinnatifid spinose bract-like leaves at base; leaflets of the *involucre* nearly naked, appressed,—the lower ones ovate-lanceolate, acuminate, with rather short subulate spines,—the upper ones long, lance-linear, acuminate, not spinose, serrulate near the apex. *Florets* often 2 inches in length, of a rather pale reddish purple, with whitish anthers. *Pappus* an inch to an inch and half long.

Hab. Old fields; Mica-slate hills: frequent. *Fl.* July. *Fr.* August.

Obs. The flowers of this species are quite fragrant; and the heads rather handsome,—being the largest of any of our native thistles.

4. C. SPINOSISSIMUS, *Walt ?* Leaves semi-amplexicaul, pinnatifid, acutely subdivided, very spinose, lanuginous beneath; heads with a verticil of pectinately spinose bracts at base; leaflets of the involucre linear-lanceolate, very acute, scarcely spinose. *Beck, Bot. p.* 173.
Cirsium horridulum. *Mx. Am.* 2. *p.* 90.
Cnicus spinosissimus? *Willd. Sp.* 3. *p.* 1684. *Ait. Kew.* 4. *p.* 484. *Lindl. Ency. p.* 684.
Cn. horridulus. *Muhl. Catal. p.* 70. *Pursh, Am.* 2. *p.* 507. *Nutt. Gen.* 2. *p.* 130. *Bart. Phil.* 2. *p.* 95. *Ell? Sk.* 2. *p.* 272. *Bigel. Bost. p.* 291. *Torr. Comp. p.* 281. *Eat. Man. p.* 100. Also, *Pers. Syn.* 2. *p.* 390.
MOST SPINOSE CARDUUS. *Vulgò*—Yellow Thistle.

Root perennial, *Pursh, Ell. Beck*, &c. biennial, *Bigel. Torr. Stem* erect, 18 inches to 2 or 3 feet high, mostly simple, striate, lanuginous, fistular. *Leaves* hairy above, lanuginous beneath, semi-amplexicaul, pinnatifid, the segments rather short, incised, and dentate, pointed with short rigid spines. *Heads* mostly solitary, terminal, large (sometimes as large as in the preceding), embraced at base by a verticil of numerous lance-linear *bracts* about as long as the involucre,—the *bracts* sub-pinnatifid, or sinuate-dentate, pectinately spinose, with the spines somewhat in pairs; leaflets of the *involucre* linear-lanceolate, acuminate, not spinose, minutely ciliate on the margin. *Florets* yellow (pale purple, *Ell.*), an inch to an inch and half long. *Pappus* about an inch long.

Hab. Fields; New London, Londongrove: rare. *Fl.* July. *Fr.* August.

Obs. This was observed in the above localities, by Dr. E. MICHENER, in 1828,—but is still rare, in this County. I have received, from the Rev. M. A. CURTIS, a N. Carolina specimen, which has the *florets purple*, as described by Mr. *Elliott*; and which may, possibly, be distinct,—though in its general appearance it agrees pretty well with our plant. If ours be really identical with the C. *spinosissimus*, of Europe, I should strongly suspect it to have been introduced. I am satisfied it is not indigenous in this County.

5. C. MUTICUS, *Nutt.* Leaves sessile, pinnatifid, lanuginous beneath, the segments lanceolate, acute, spinulose; branches rather naked; involucre sub-globose, the leaflets unarmed, viscid, arachnoid-villose. *Beck, Bot. p.* 172.
Also ? C. glutinosus. *Beck, Bot. p.* 173.
Cirsium muticum. *Mx. Am.* 2. *p.* 89.
Cnicus muticus. *Muhl. Catal. p.* 70. *Pursh, Am.* 2. *p.* 506. *Ell. Sk.* 2. *p.* 268. *Torr. Comp. p.* 281. *Florul. Cestr. p.* 85. *Eat. Man. p.* 100.
Cn. glutinosus? *Bigel. Bost. p.* 291.
MUTIC, OR AWNLESS CARDUUS.

Root biennial (perennial, *Muhl.*). *Stem* 3 to 5 or 6 feet high, erect, rather slender, angular-sulcate and striate, more or less pubescent, paniculately branched, branches slender, virgate, rather few-leaved. *Leaves* roughish-pubescent above, lanuginous beneath. *Heads* solitary, terminal, sub-globose, half an inch to an inch in diameter, leaflets of the *involucre* ovate-lanceolate, acute, not spinose, closely appressed, viscid, and connected by a hoary cobweb-like villus, which gives the involucre a chequered appearance. *Florets* purple. *Pappus* mostly plumose, often partly pilose and scabrous.

Hab. Low grounds; swamps, and thickets: frequent. *Fl.* August. *Fr.* Sept.

Obs. I have very little doubt this is the Cn. *glutinosus*, of *Bigelow*.

6. C. ARVENSIS, *Sm.* Stem paniculate; leaves sessile, lanceolate, pinnatifid and dentate, spinose, undulate, smoothish; involucre ovoid, small, the leaflets lance-ovate, mucronate, appressed. *Beck, Bot. p.* 172.

Serratula arvensis. *Willd. Sp.* 3. *p.* 1646. *Ait. Kew.* 4. *p.* 473.
Cnicus arvensis. *Muhl. Catal. p.* 70. *Pursh, Am.* 2. *p.* 506. *Bigel. Bost. p.* 291. *Torr. Comp. p.* 281. *Eat. Man. p.* 100.
Breea arvensis. *Less. Syn. p.* 9.

FIELD CARDUUS. *Vulgò*—Canada Thistle.

Gallicè—Chardon aux ânes. *Germanicè*—Die Ackerdistel.

Root perennial, creeping, and exceedingly tenacious of life. *Stem* 18 inches to 3 feet high, erect, slender, striate, smoothish, paniculately branched, branches slender, lanuginous. *Leaves* sessile, slightly decurrent, smoothish, sometimes lanuginous beneath. *Heads* numerous, terminal, sub-pedunculate, ovoid, small (1 third to 2 thirds of an inch in diameter); leaflets of the *involucre* appressed, lance-ovate, mucronate, with the point a little spreading, smoothish, minutely ciliate. *Florets* purple (rarely whitish), mostly perfect? (dioicous, *Lessing*). *Akenes* linear-oblong, slightly 4-cornered; *pappus* finally longer than the florets.

Hab. Great Valley; Kimberton: rare. *Fl.* July. *Fr.* August.

Obs. This foreigner,—the vilest pest that ever invaded the farms of our country, in the form of a weed,—was first observed in the Great Valley, near the Warren Tavern, in 1828, by Mr. JOSHUA HOOPES;—and has been found, since, at Kimberton, and in one or two other localities. It appears to have been introduced among Timothy seed. The utmost vigilance will be required, to prevent it from spreading. It was a singular taste, in *Lessing*, to dedicate so hateful a plant to a respectable Botanist.

* * *Radical leaves only pinnatifid.*

7. C. ALTISSIMUS, *L.* Stem-leaves sessile, oblong-lanceolate, dentate and somewhat spinescent-ciliate, roughish above, tomentose beneath, radical ones petiolate, pinnatifid; involucre oblong-ovoid, bracteate at base; leaflets of the involucre ovate-lanceolate, appressed, with a spreading spine at apex. *Beck, Bot. p.* 172.

Cnicus altissimus. *Willd. and most of the Authors here quoted.*

TALLEST CARDUUS.

Root perennial? *Stem* 3 to 6 or 8 feet high, erect, branching and slender above sulcate-striate, roughish-pubescent. *Leaves* hoary-tomentose beneath, the radical ones large (12 to 18 inches long, and 3 to 5 or 6 inches wide), pinnatifid, petiolate, the cauline ones sessile, dentate or denticulate, ciliate with slender spines, or spinescent bristles. *Heads* oblong-ovoid, about an inch in diameter, with linear-lanceolate spinescent-ciliate *bracts* at base; leaflets of the *involucre* ovate-lanceolate, appressed, slightly connected by a lanuginous web, of a livid color near the apex, terminating in a subulate keeled spreading spine—the inner leaflets lance-linear and scarcely spinose. *Florets* purple, often palish.

Hab. Fence-rows; thickets, &c. frequent. *Fl.* August. *Fr.* September.

Obs. This is usually taller than our other species of Carduus,—and is readily distinguished by its stem-leaves not being pinnatifid. One or two additional species are enumerated in the U. States.

III. CICHORIUM TRIBE. Heads *radiatiform, homogamous, with the florets all nearly equal, never dioicous.* Corolla *ligulate, 5-toothed. Plants lactescent.* CICHORACEÆ. *Lessing.*

Sub-Tribe 3. HYOSERIDEÆ. *Pappus* crown-like, or of numerous broadish chaffy scales. *Receptacle* without *bracts.*

359. CICHORIUM. *L. Nutt. Gen.* 625.

[Etymology obscure; probably derived from the Arabic, *Chicouryeh.*]

Involucre with the leaflets in a double series. *Akenes* turbinate, not beaked. *Pappus* of chaffy scales, short, nearly equal, in a double? series. *Receptacle* sub-palcaceous.

1. C. INTYBUS, *L.* Radical leaves runcinate; heads of flowers axillary, subsessile, mostly in pairs. *Beck, Bot. p.* 171.

Vulgò—Wild Succory.

Gall. La Chicoree sauvage. *Germ.* Der Wegewart. *Hisp.* Achicoria.

Root perennial, somewhat fusiform, often branching. *Stem* 2 to 4 feet high, angular-striate, roughish-pubescent, with numerous and somewhat virgate scabrous branches. *Radical leaves* 4 to 8 or 10 inches long, numerous, runcinate like those of the Dandelion; *stem-leaves* smaller, inconspicuous on the branches, cordate-lanceolate, sub-amplexicaul, sinuate-dentate, roughish-pubescent. *Heads* axillary, on the side of the stem and branches, sessile, or subsessile, in pairs, or often solitary; leaflets of the *involucre* in two series,—the outer or lower ones 5 in number, lance-ovate, acute, glandular-ciliate, rather spreading,—the inner ones about 8, lance-linear, nearly equal, somewhat ciliate and viscid, forming a slightly angular cylinder, or prism. *Florets* flat, linear, 5-toothed, all radiating towards the circumference, pale blue, or sometimes purplish, and often white. *Pappus* of small chaffy scales, oblong, obtuse, or emarginate, apparently in a *single* series (double, *Less.*).

Hab. Fields, and meadows, near Kimberton: rare. *Fl.* Aug. *Fr.* Sept—Octo.

Obs. This foreigner is becoming extensively naturalized in our country, and has made its appearance in the N. Easterly portion of Chester County. The roasted or parched *root* is said to be used as a substitute for coffee, in Europe. The C. *Endivia*, or *Endive*,—especially the *var. crispa.*—is much cultivated as a Salad, near the City of Philadelphia; but is rarely cultivated in this County. There are no native species in the U. States.

360. KRIGIA. *Schreb. Nutt. Gen.* 633.

[Named in honor of *David Krieg*; a German Botanist.]

Involucre many-leaved, sub-simple. *Akenes* turbinate, not beaked. *Pappus* in a double series; the outer series crown-like, of 5 short chaffy scales, the inner series of 5 long scabrous bristles. *Receptacle* naked.

1. K. VIRGINICA, *Willd.* Leaves mostly lyrate, smooth, glaucous; heads solitary, on scapes finally longer than the leaves; involucres glabrous. *Hook. Am.* 1. *p.* 301.

Also, K. dichotoma. *Nutt. Gen.* 2. *p.* 127.

Hyoseris virginica. *Mx. Am.* 2. *p.* 88. *Pers. Syn.* 2. *p.* 369.

Cynthia virginica. *Beck, Bot. p.* 169. Not of *Don* (*fide Lessing.*).

VIRGINIAN KRIGIA. *Vulgò*—Dwarf Dandelion.

Plant glaucous, small. *Root* annual. *Leaves* all radical,—the primary ones orbicular, or spatulate, entire, the others sub-lyrate, often lanceolate and sinuate-

dentate, 1 to 2 or 3 inches in length, narrowed to a petiole at base. *Scapes* 3 to 9 inches high, usually 2 to 4 or 5 from a root, sometimes solitary, slender, naked, smooth, elongating. *Head* of flowers terminal, small; leaflets of the *involucre* nearly in a simple series, linear-lanceolate, acute, nearly equal, spreading. *Florets* deep yellow. *Akenes* oblong-turbinate, sulcate-striate, scabrous, reddish brown, crowned with 5 roundish or cuneate-obovate membranous scales, and 5 scabrous white bristles.

Hab. Dry, sandy grounds; roadsides, &c. frequent. *Fl.* May-Aug. *Fr.* June-Sept.

Obs. This plant varies considerably in appearance, in different stages of its progress to maturity. It is the only species of the genus.

361. CYNTHIA. *Don. Less. Syn. p.* 129.

[Perhaps from Mount *Cynthus*; which was sacred to Apollo and Diana.]

Involucre many-leaved, in a double series. *Akenes* oblong, striate, smoothish, not beaked. *Pappus* in many series, unequal, the outer series very short, of many paleæ? the others hair-like, scabrous, caducous. *Receptacle* naked.

1. C. AMPLEXICAULIS, *Beck.* Stem scape-like, often bifid, or trifid, few-leaved; radical leaves sublyrate and spatulate-lanceolate, cauline ones lanceolate, amplexicaul, entire. *Beck, Bot. p.* 168.
Hyoseris amplexicaulis. *Mx. Am.* 2. *p.* 87.
H. prenanthoides. *Willd. Sp.* 3. *p.* 1615. *Muhl. Catal. p.* 69.
Troximon virginicum. *Pers. Syn.* 2. *p* 360. *Pursh, Am.* 2. *p.* 505. *Lindl. Ency. p.* 666.
Krigia amplexicaulis. *Nutt. Gen.* 2. *p.* 127. *Bart. Phil.* 2. *p.* 93. *Ell. Sk.* 2. *p.* 266. *Torr. Comp. p.* 280. *Eat. Man. p.* 196.

AMPLEXICAUL CYNTHIA.

Plant smooth and glaucous. *Root* perennial. *Stem* 12 to 18 inches high, scape-like, often 2 or 3 from the root, nearly naked, mostly once or twice bifid, or dichotomous, with an amplexicaul leaf at the forks, often trifid, or with 3 slender upright naked branches, or peduncles, at summit. *Radical leaves* 3 to 6 inches long, and one or two inches wide, spatulate-lanceolate, sinuate-dentate, sublyrate, or nearly entire, narrowed to a petiole at base. *Heads* terminal on the branches, often a little hairy at base, or on the summit of the peduncles; leaflets of the *involucre* lance-linear, united at base, arranged alternately somewhat in a double series. *Florets* deep yellow.

Hab. Mica-slate range: not common. *Fl.* May—June. *Fr.* July.

Obs. The *pappus*, in my specimens, seems to consist entirely of brittle scabrous hairs, without any exterior chaffy scales. This has been found in several places in the Northern side of the County; but is not very common. It is probable this Genus may embrace one or two other American plants, which were formerly referred to *Krigia*.

Sub-Tribe 5. SCORZONEREÆ. *Pappus* paleaceous, of very narrow semi-lanceolate bristle-like scales, mostly plumose, at least the interior ones,—rarely all scabrous. *Receptacle* without bracts.

362. TRAGOPOGON. *L. Less. Syn. p.* 133.

[Greek, *Tragos*, a goat, and *Pogon*, a beard; in allusion to the pappus.]

Involucre many-leaved, sub-simple. *Akenes* striate, scabrous, termin-

ating in a long continuous beak; *areola* lateral. *Pappus* of several series, plumose. *Receptacle* naked.

1. T. PORRIFOLIUS, L. *Leaves lance-linear, entire, erect; peduncles thickened upwards; involucre longer than the florets.* Willd. Sp. 3. p. 1493.

LEEK-LEAVED TRAGOPOGON. Vulgò—*Oyster-plant. Salsify.* Gall.—*Salsifis.* Germ.—*Der Bockbart.* Hisp.—*Barba cabruna.*

Plant smooth and somewhat glaucous. Root *biennial, fleshy and fusiform.* Stem 3 *to* 5 *feet high, somewhat dichotomously branching.* Leaves 3 *to* 9 *or* 12 *inches long, and* 1 *third of an inch to an inch wide, lance-linear, ovately dilated at base, and tapering to a long narrow acumination, sessile and semi-amplexicaul.* Heads *terminal, on enlarged clavate peduncles; leaflets of the* involucre *in a nearly simple series, lanceolate, acute, longer than the florets.* Florets *violet-purple, with a fuscous tinge.* Akenes *lance-oblong, about half an inch in length, striate-sulcate, scabrous, tapering to a smooth slender beak about an inch long, which supports the pappus, and renders it apparently stipitate.* Pappus *plumose, pubescent at base, with about* 5 *of the linear paleæ, or rays, longer than the rest, and naked at apex.*

Hab. *Gardens: frequent.* Fl. *June.* Fr. *July.*

Obs. *Cultivated for the* root,—*which, when properly cooked, has something of the flavor of oysters—whence a common name of the plant. There are no native species in the U. States.*

Sub-Tribe 6. LACTUCEÆ. *Pappus* hair-like, mostly unequal, silvery, very soft, fugacious, never plumose; the hairs exactly linear, not flatted and broader at base. *Receptacle* mostly without *bracts.*

363. LACTUCA. *L. Nutl. Gen.* 629.

[Latin, *Lac*, milk; on account of the milky juice of the plant.]

Heads few-flowered. *Involucre* cylindric; with the leaflets erect, imbricated, the exterior ones broader. *Akenes* compressed, with a long filiform beak. *Pappus* in several series. *Receptacle* flat, naked.

1. L. SATIVA, L. *Stem corymbose; leaves suborbicular, the cauline ones cordate.* Willd. Sp. 3. p. 1523.

CULTIVATED LACTUCA. Vulgò—*Garden Lettuce. Salad.* Gallicè—*La Laitue.* Germanicè—*Der Salat.* Hisp.—*Lechuga.*

Plant smooth, yellowish-green and glaucous. Root *annual.* Stem 2 *to* 4 *feet high, striate, corymbosely branched above, branches clothed with small leaves.* Leaves *oval, or suborbicular, somewhat ciliate, the radical ones wavy, the cauline ones cordate at base and amplexicaul.* Heads *numerous, terminal, small, nearly cylindric; leaflets of the* involucre *lanceolate, the outer or lower ones ovate.* Florets *yellow.* Akenes *compressed, lance-obovate, striate-ribbed;* beak *filiform, about twice as long as the akene, supporting the pappus at summit.*

Hab. *Gardens: common.* Fl. *July.* Fr. *August.*

Obs. *Very generally cultivated for its young* radical leaves,—*which are used as a Salad. There are apparently several* varieties,—*especially one with the leaves densely imbricated, called* Head-Salad—var. capitata, Willd. l. c.

2. L. ELONGATA, *Muhl.* Lower leaves runcinate, amplexicaul, upper ones lanceolate, sessile; heads of flowers racemose-paniculate. *Beck, Bot. p.* 169.

L. longifolia. *Mx. Am.* 2. *p.* 85.
Also ? L. integrifolia. *Bigel. Bost. p.* 287. *Eat. Man. p.* 197.

ELONGATED LACTUCA. *Vulgò*—Wild Lettuce.

Plant smooth. *Root* perennial? *Stem* 3 to 6 feet high, sparingly branched. *Lower leaves* 8 to 12 inches long, and 2 to 3 or 4 inches wide, deeply runcinate, sometimes sublyrate, often long-lanceolate with 2 or 3 conspicuous lanceolate divaricate segments on each side, near the middle; segments dentate, or entire; *upper leaves* gradually smaller, narrow-lanceolate, or lance-linear, long, and often entire,—sometimes broad-oblanceolate, acuminate, and dentate. *Heads* numerous, subcylindric, in a long racemose panicle, sometimes the branches rather corymbose; *peduncles* short, bracteate; lower or outer leaflets of the *involucre* lance-ovate, spreading, inner leaflets longer, sublinear, appressed. *Florets* yellow. *Akenes* compressed, elliptic-oblong, obscurely 3-nerved and margined, the central nerve on each side keeled, the whole surface transversely rugulose and minutely scabrous, with a slender beak at apex nearly as long as the akene, and supporting the pappus at summit.

Hab. Fence-rows, thickets, &c. frequent. *Fl.* July. *Fr.* August.

Obs. The leaves of this plant are exceedingly variable in form; and, as Dr. *Bigelow* remarks, when the main stem is cropped, or broken, young branches shoot up with linear entire leaves, appearing like a different species. I have specimens in which the leaves are all more or less obovate-lanceolate, acuminate, sinuate-dentate, amplexicaul, and sagittate at base,—more resembling *Sonchus acuminatus*, than the usual form of L. *elongata:* Yet Dr. PICKERING thought them not distinct from the present species. Two or three additional species are enumerated in the U. States.

364. LEONTODON. *L. Nutt. Gen.* 627.

[Greek, *Leon*, a lion, and *Odous*, a tooth; from the toothed margins of the leaves.]

Heads many-flowered. *Involucre* imbricated, with the leaflets appressed, or the outer ones spreading. *Akenes* terete, or angular, denticulate at apex, terminating in a long slender beak. *Pappus* in many series. *Receptacle* rather convex, naked, punctate.

1. L. TARAXACUM, *L.* Leaves runcinate, dentate, smooth; head solitary, terminal, on a fistular scape; outer leaflets of the involucre reflexed. *Beck, Bot. p.* 168.

Taraxacum Dens leonis. *Less. Syn. p.* 135. *Vulgò*—Dandelion.

Gall.—Dent de Lion. *Germ.*—Der Loewenzahn. *Hisp.*—Amargon.

Root perennial. *Leaves* all radical, 4 to 12 inches long, and 1 to 2 or 3 inches wide, lance-oblong, runcinate, somewhat pubescent, finally smooth. *Scapes* several from the root, 4 to 12 or 15 inches in length (elongating), terete, fistular, smooth, each bearing a single head of florets. Leaflets of the *involucre* numerous, somewhat in a double series,—the inner ones lance-linear, appressed, with scarious margins,—the outer or lower ones reflexed, slightly ciliate,—at length the entire involucre reflexed. *Florets* yellow. *Akenes* oblong, striate-ribbed and angular, minutely muricate, terminating in a beak which is short at first, finally about 3 fourths of an inch long, filiform, bearing the pappus at summit, and diverging in all directions, forming a globose head.

Hab. Pastures, roadsides, &c. very common. *Fl.* April—Aug. *Fr.* May—Sept.

Obs. When the heads of florets first expand, the pappus is nearly sessile; as soon as the florets shrivel, the inner series of the involucre closes up for a short

time, in a cylindrical form,—the beak of the akenes then becomes suddenly elongated, the whole involucre is reflexed, and the elevated pappus displayed in a globular head. This foreigner is completely naturalized; and rather more abundant than welcome, in our pastures. It is said to be esteemed, by some, as a salad; and to possess diuretic properties—as one of its vulgar names would indicate. There are no native species in the U. States.

365. PRENANTHES. *L. Nutt. Gen.* 628.

[Greek, *Prenes*, drooping, and *Anthos*, a flower; from its nodding flowers.]

Heads few-flowered, nodding. *Involucre* cylindric, calyculate at base. *Akenes* subterete, not beaked. *Pappus* in several series, scabrous. *Receptacle* naked.

1. P. ALBA, *L.* Radical and lower leaves angulate-hastate, dentate, palmate-lobed, and sinuate-pinnatifid, upper leaves more or less ovate, and lanceolate, all petiolate; racemes subfasciculate, nodding; involucres about 8-leaved, 5 to 12-flowered. *Bigel. Bost. p.* 286.

P. Serpentaria. *Florul. Cestr. p.* 83. Also, *Pursh, Am.* 2. *p.* 499. ICON, *tab.* 24.
Also ? P. altissima. *Willd. Pursh, Ell. Florul. Cestr.* &c.
Also ? P. cordata, *and* deltoidea. *Ell. Florul. Cestr.* &c.
Nabalus albus. *Hook. Am.* 1. *p.* 294.
Also ? N. altissimus, cordatus, *and* serpentarius. *Hook. l. c.*
Harpalyce alba. *Beck, Bot. p.* 167. Not Harpalyce of *DC.*
Also ? H. altissima, cordata, *and* serpentaria. *Beck, l. c.*

WHITE PRENANTHES. *Vulgò*—Lion's foot. Rattle-snake root.

Root perennial. *Stem* 2 to 5 or 6 feet high, sometimes nearly simple, often much branched, generally purplish, smooth. *Leaves* 2 or 3 to 6 or 8 inches long, and often as wide as long, very variable in form, from deltoid to hastate-lobed, palmate- and pinnatifid-lobed, roundish-ovate and ovate-lanceolate, more or less dentate, or denticulate, smooth, rather thin and membranaceous, often decurrent on the petioles,—the radical leaves large, and on long petioles. *Heads* of flowers cylindric, numerous, nodding, in paniculate racemose fascicles, terminal and axillary; *involucres* often purplish, the inner leaflets in a single series, sublinear and equal, the outer ones short, ovate, imbricated. *Florets* whitish, or ochroleucous. *Akenes* subterete, striate, not beaked, but crowned by a sessile scabrous tawny pappus.

Hab. Woodlands; clearings, &c. frequent. *Fl.* August. *Fr.* Sept—October.

Obs. This is a remarkably heterophyllous and variable plant; and I am strongly inclined to the opinion of Drs. *Bigelow, Torrey, Hooker*, &c. that several of the species, in the books, are nothing more than *varieties*. In revising our Chester County specimens, I have thought it safest, for the present, to refer them all to this species;—though it must be confessed, we often meet with one in which the involucres are usually much smaller, greenish, about 5-flowered, and the florets more yellow (which I take to be the P. *altissima*, of Authors)—and may, perhaps, prove to be distinct. The *root* of the P. *serpentaria, Pursh*—with larger purplish sub-glaucous involucres—is said to be intensely bitter, and is one of the many frontier remedies for the bite of snakes. Eight or ten additional species have been enumerated in the U. States; but a careful revision of them will probably reduce the number. I am gratified to find the following good authority for retaining undisturbed the old generic name, *Prenanthes*—with which we have been so long familiar. "Genera Doniana *Harpalyce* (*Nabalus*, Cass.), *Lygodesmia*, et *Atalanthus*, vix atque ne vix quidem separari merentur." *Lessing.*

366. SONCHUS. *L. Nutt. Gen.* 630.
[An ancient *Greek* name, of obscure meaning.]

Heads ventricose, or dilated at base. *Involucre* many-leaved, closely imbricated, connivent at summit. *Akenes* not beaked, truncate at apex, ancipital-compressed, about 5-ribbed on each side, transversely rugulose. *Pappus* of several series. *Receptacle* naked.

* *Flowers yellow.*

1. S. OLERACEUS, *L.* Leaves lyrate-runcinate, and sinuate-pinnatifid, acutely dentate, sagittate-amplexicaul; peduncles subcymose, flocculent-tomentose; involucres smooth. *Beck, Bot. p.* 171.

POT-HERB SONCHUS. *Vulgò*—Common Sow-thistle.

Gallicè—Le Laiteron. *Germ.*—Die Saudistel. *Hisp*—Cerrája.

Root annual, fusiform. *Stem* 2 to 3 feet high, branched, fistular, tender, glandular-pilose above. *Leaves* 3 to 6 or 8 inches long, smooth, sessile and amplexicaul, oblong-lanceolate, undulate, runcinate, and variously pinnatifid, and sinuate-dentate, the teeth and segments cuspidate. *Heads* in terminal and axillary cymose panicles; *peduncles* thickish, 1 third of an inch to an inch and half long, clothed when young with a loose flocculent white tomentum. *Involucre* dilated or tumid at base, orbicular, abruptly contracted above, or acuminate. *Florets* pale yellow. *Pappus* very white, and silky-pilose, the rays fasciculately connate at base.

Hab. Gardens, and cultivated Lots: frequent. *Fl.* August—Sept. *Fr.* Sept.

Obs. An introduced weed,—completely naturalized in our cultivated grounds.

2. S. SPINULOSUS, *Bigel.* Leaves amplexicaul, lance-oblong, undulate and spinulose-dentate on the margin; peduncles subumbellate. *Beck, Bot. p.* 171.

PRICKLY SONCHUS.

Root annual. *Stem* about 2 feet high, branched, smoothish, or slightly glandular-pilose above. *Leaves* 2 to 6 or 8 inches long, and 1 to 2 inches wide, lance-oblong, wavy and sinuate, with numerous prickly teeth on the margin, sometimes pinnatifid, smooth. *Heads* in terminal subumbellate panicles; outer leaflets of the *involucre* acuminate, appressed. *Florets* yellow. *Pappus* very white, silky-pilose.

Hab. Along Schuylkill, at Black Rock: rare. *Fl.* August. *Fr.* September.

Obs. Collected by D. TOWNSEND Esq. in 1832. I have some doubts whether this be really more than a *variety* of the preceding.

* * *Flowers blue.*

3. S. FLORIDANUS, *L.* Leaves lyrate-runcinate, denticulate; heads of flowers paniculate; peduncles squamose-bracteate. *Willd. Sp.* 3. *p.* 1520.
Agathyrsus floridanus. *Beck, Bot. p.* 170.

FLOWERING SONCHUS.

Root biennial. *Stem* 3 to 6 feet high, smooth, or a little hairy near the insertion of the leaves, often purplish, paniculate at summit. *Leaves* 3 to 8 or 12 inches long, and 2 to 4 or 5 inches wide, lance-oblong, lyrate-runcinate, or deeply pinnatifid, the segments sinuate- or repand-denticulate, smoothish above, often pilose on the nerves beneath,—the *radical* ones on long petioles, *cauline* ones sessile, or

the lower ones narrowed to winged petioles. *Heads* of flowers rather small (about half an inch long, and 1 fourth to 1 third of an inch in diameter, in an oblong terminal panicle 9 to 18 inches in length; *peduncles* half an inch to an inch long, rather slender, clothed with a few small lance-ovate bracteate scales. *Involucre* ovoid-oblong, ventricose at base; leaflets often tinged with dark purple. *Florets* blue. *Akenes* strongly ribbed; *pappus* somewhat scabrous, brittle, pale brown, or dirty white.

Hab. Fence-rows; thickets, &c. frequent. *Fl.* August. *Fr.* September.

Obs. I have often observed specimens with the florets pale blue,—which I formerly supposed to be the S. *leucophæus*, *Willd.* and accordingly inserted that species in my Catalogue; but upon a review of all my collections, I am unable to perceive any distinctive characters, sufficient to justify the continuance of that species in this work.

4. S. ACUMINATUS, *Willd.* Radical leaves slightly runcinate, cauline ones ovate, acuminate, petiolate; heads of flowers paniculate; peduncles somewhat squamose-bracteate. *Willd. Sp.* 3. *p.* 1521. Lactuca villosa. *Beck*, *Bot. p.* 170.

ACUMINATE SONCHUS.

Root biennial. *Stem* 3 to 6 feet high, terete, smooth, paniculate at summit. *Leaves* 3 to 5 or 6 inches long, and 1 to 2 or 3 inches wide, generally lance-ovate (sometimes nearly deltoid, or triangular-hastate), acuminate, sinuate-denticulate, smooth above, often pilose on the nerves beneath, abruptly narrowed at base to a winged tapering *petiole* 1 or 2 inches in length. *Heads* of flowers small, in a rather loose panicle, sometimes racemose on the branches; *peduncles* 1 line to half an inch long, slender, with a few minute bracteate scales. *Involucre* oblong, slightly ventricose; *leaflets* often tinged with dark purple, the outer ones lance-ovate, short. *Florets* blue. *Akenes* compressed, ovate-lanceolate, acuminately tapering at apex, but scarcely beaked (pappus stipitate, *Ell.*); *pappus* minutely scabrous, rather brittle, white.

Hab. Woodlands, and thickets: frequent. *Fl.* August. *Fr.* September.

Obs. Four or five additional species are enumerated in the U. States.

Sub-Tribe 7. HIERACIEÆ. *Pappus* hair-like, stiffish and very brittle, becoming a dirty yellow, never plumose, the hairs exactly linear. *Receptacle* with, or without *bracts*.

367. HIERACIUM. *L. Nutt. Gen.* 631.

[Gr. *Hierax*, a hawk; from a notion that hawks sharpened their sight with its juice.]

Involucre ovoid-oblong, imbricated. *Akenes* terete, 10-ribbed, not beaked, truncate at apex. *Pappus* in a single series. *Receptacle* naked, alveolate, or villose.

1. H. VENOSUM, *L.* Stem scape-like, mostly naked, smooth, corymbose-paniculate; leaves obovate-oblong and lanceolate, entire, margin ciliate, veins purple; involucres smooth. *Beck*, *Bot. p.* 166.

VEINED HIERACIUM. *Vulgo*—Hawkweed.

Root perennial. *Stem* 1 to 2 feet high, scape-like, naked, or with few leaves, corymbose-paniculate at summit. *Leaves* mostly all radical, 2 to 4 or 5 inches long, and 1 to near 2 inches wide, varying from obovate to lance-oblong, tapering almost to a petiole at base, more or less hairy, especially on the midrib beneath, often nearly smooth above, the veins conspicuous, dark purple, or sometimes

small and scarcely colored. *Heads* of flowers in a loose corymbose panicle, the branches slender, smoothish; *involucre* smoothish, the inner leaflets about 10, lance-linear, nearly equal, the outer ones much shorter, imbricated. *Florets* yellow. *Akenes* oblong, striate; *pappus* scabrous.

Hab. Woodlands, and clearings: frequent. *Fl.* May—June. *Fr.* June—July.

Obs. The *variety* with inconspicuous veins is not unfrequent, here,—and is very common in the Pines of New Jersey. A few years since, this plant was announced as a certain remedy, or antidote, for the poison of the Rattle Snake; but I believe its virtues remain to be authenticated.

2. H. GRONOVII, *L.* Stem simple, more or less leafy, very hairy below; leaves elliptic-obovate, and oblanceolate; panicle few-flowered, rather compact; pedicels and involucres pubescent, glandular-hispid. *Beck? Bot. p.* 166.

Var. a. *nudicaule, Mx.* Stem nearly naked above; panicle subfastigiate; pedicels rather slender.

Var. b. *foliosum, Mx.* Stem leafy; panicle oblong; pedicels thickish, divaricate, very hirsute.

Also? H. marianum. *Willd. Pers. Ell* &c.
Also, H. scabrum. *Florul. Cestr. p.* 84. *Mx? Am.* 2. *p.* 86.

GRONOVIUS' HIERACIUM.

Root perennial. *Stem* 1 to 2 or 3 feet high, mostly simple, scabrous, clothed with long spreading canescent hairs, especially towards the base. *Leaves* 1 or 2 to 5 or 6 inches long, and half an inch to 2 inches wide, hairy, the lower ones tapering to a petiole at base, those on the stem sessile (in *var. a.* few, lance-oblong—in *var. b.* more numerous, broader, obovate, and ovate). *Heads* of flowers in an oblong terminal panicle (in *var. a.* smaller, with the branches more erect, corymbose, slender, and less hispid); *involucre* glandular-pilose. *Florets* yellow. *Akenes* oblong, striate-sulcate.

Hab. Woodlands; and sterile meadows: frequent. *Fl.* August. *Fr.* Sept.

Obs. The *var. b.* above mentioned, is the H. *scabrum*, of my Catalogue,—which Prof. *Hooker* thinks is not specifically distinct from H. *Gronovii*. The *var. a.* however, has more of the habit of H. *venosum;* but is much more hairy. Dr. *Aikin* (in *Eat. Man. p.* 175.) is moreover of opinion that the H. *venosum* is only a *var.* of H. *Gronovii*.

3. H. PANICULATUM, *L.* Stem leafy, loosely paniculate, smoothish; leaves lanceolate, denticulate, smooth, membranaceous; pedicels very slender, divaricate; bracts subulate. *Beck, Bot. p.* 166.

PANICULATE HIERACIUM.

Root perennial. *Stem* 2 to 3 or 4 feet high, slender, striate, smoothish, loosely and paniculately branched at summit. *Leaves* 1 to 3 or 4 inches long, and half an inch to an inch wide, acute at each end, remotely denticulate, thin and smooth, sessile. *Heads* of flowers in a long loose compound panicle, with very slender branches, and minutely bracteate pedicels, *involucre* smooth, the inner leaflets very narrow, linear. *Florets* yellow. *Akenes* oblong, deeply striate-sulcate, or ribbed, reddish brown.

Hab. Woodlands; and old meadows: frequent. *Fl.* August. *Fr.* September.

Obs. Six or eight additional species are enumerated in the U. States; and Prof. *Hooker* describes 14 in British America.

IV. VERNONIA TRIBE. Heads *homogamous with perfect florets, or rarely heterogamous with florets in a single series, the pistillate ones bearing ligulate corollas in the circumference, the rest perfect.* Corolla *of the perfect florets mostly regular,* 5-*cleft, with diverging lobes.* Style *with the branches mostly long and subulate.* VERNONIACEÆ. *Lessing.*

Sub-Tribe 1. VERNONIEÆ. *Heads* many-flowered and homogamous, or 1-flowered; involucre imbricated, in many series. Branches of the *Style* acuminate.

368. VERNONIA. *Screb. Nutt. Gen.* 640.

[Dedicated to *William Vernon;* an Engish Botanist]

Heads many-flowered. *Involucre* ovoid, imbricated. *Florets* all tubular, perfect. *Pappus* in several series; the outer series short, bristly-paleaceous, the inner hair-like. *Receptacle* naked.

1. V. PRÆALTA, *Willd.* Leaves numerous, lanceolate, serrulate, scabrous; corymb fastigiate; leaflets of the involucre ovate, acute, or filiform at apex. *Beck, Bot. p.* 175.
Also, V. noveboracensis, *of the Authors here quoted.*

VERY TALL VERNONIA. *Vulgò*—Iron weed.

Root perennial. *Stem* 2 or 3 to 6 or 7 feet high, striate-sulcate, roughish-pubescent, somewhat branching at summit. *Leaves* 3 to 6 or 8 inches long, and 3 fourths of an inch to 2 or 3 inches (usually about an inch or inch and half) wide, lanceolate, or lance-oblong, sessile or subsessile, serrate, mostly somewhat scabrous and coriaceous. *Heads* of flowers in a large terminal corymb; leaflets of the *involucre* imbricated, ovate, with a subulate or filiform acumination, mostly dark purple. *Florets* of a bright deep purple. *Akenes* oblong-turbinate, sulcate, scabrous with short hairs; *pappus* a dirty white, or often purplish, scabrous, in a double series, the outer one consisting of short chaff-like bristles.

Hab. Meadows, and low grounds: frequent. *Fl.* August. *Fr.* September.

Obs. I have long thought that this, and V, *noveboracensis,* were scarcely distinct species; and am pleased to find that opinion sanctioned by the high authority of Prof. *Hooker,* and others. This is a well known and rather obnoxious weed, in our meadows. Five or six additional species are enumerated in the U. States.

V. EUPATORIUM TRIBE. Heads *homogamous with perfect florets, rarely heterogamous, very rarely sub-dioicous.* Corolla *regular, mostly* 5-*toothed, with the teeth erect.* Style *with the branches mostly very long and clavate.* EUPATORIACEÆ. *Lessing.*

Sub-tribe 3. EUPATORIEÆ. *Heads* homogamous with the florets all perfect. *Pappus* consisting of hairs or very narrow bristles, often plumose.

369. LIATRIS. *Schreb. Nutt. Gen.* 639.

[A name of uncertain derivation.]

Heads many-flowered. *Involucre* of many series, oblong, imbricated. *Corolla* with the limb not distinct from the tube. *Pappus* in several series, plumose. *Akenes* obconic, ribbed, hairy. *Receptacle* naked.

1. L. SPICATA, *Willd.* Leaves lance-linear, smoothish, punctate, cil-

iate at base; heads in a long terminal spike; leaflets of the involucre oblong, obtuse. *Beck, Bot. p.* 175.

L. macrostachya. *Mx. Am.* 2. *p.* 91. *Pursh, Am.* 2. *p.* 507. *Bart. Phil.* 2. *p.* 96.

SPIKED LIATRIS. *Vulgò*—Blue Blazing Star. Button Snake-root.

Root perennial, tuberous, with many small fibres. *Stem* 2 to 4 or 5 feet high, simple, striate, smooth. *Leaves* numerous, alternate, 1 to 6 or 8 inches long, and 1 line to 1 third of an inch wide, entire, sessile, the larger ones narrowed towards the base and a little dilated at the insertion, nerved, pilose along the nerves, somewhat ciliate at base. *Heads* of flowers sessile, or subsessile, in the axils of lance-linear *bracts*, mostly crowded in a dense terminal spike 6 to 12 or 15 inches in length; *involucre* oblong, terete, punctate, about 8-flowered,—the outer or lower leaflets ovate, acute, or acuminate, the inner ones oblong, obtuse, the margin thin and somewhat scarious, minutely ciliate, often purple. *Florets* bright purple. *Akenes* obconic, angular and ribbed, puncticulate, hirsute, pale brown; *pappus* scabrous-plumose.

Hab. Moist grounds; borders of woods, &c. frequent. *Fl.* August. *Fr.* Sept.

Obs. The *root* of this handsome plant is a popular medicine,—the tincture, or infusion, being often used in cases of chronic rheumatism, debility, &c. About 20 additional species are found in the U. States,—chiefly in the South and West.

370. KUHNIA. *L. Nutt. Gen.* 641.

[In honor of Dr. *Adam Kuhn*, of Penn. "*Linnæo* ex discipulis acceptissimus."]

Heads many-flowered. *Involucre* of several series, cylindric. *Corolla* with the limb not distinct from the tube. *Pappus* in a single series, plumose. *Akenes* subcylindric, not beaked, many-striate, pubescent. *Receptacle* naked.

1. K. EUPATORIOIDES, *L.* Leaves lanceolate and lance-ovate, serrate, petiolate; corymb contracted, few-flowered. *Beck, Bot. p.* 195.

EUPATORIUM-LIKE KUHNIA.

Root perennial. *Stem* 2 to 3 feet high, slender, somewhat branched, striate, pubescent, especially on the young branches. *Leaves* 1 to 3 or 4 inches long, and 1 third of an inch to an inch wide, mostly alternate, rather thin and membranaceous, coarsely and irregularly serrate, slightly scabrous above, somewhat pubescent beneath, and thickly sprinkled with resinous dots, the lower ones shorter and broader, ovate or lance-ovate, 3-nerved, the upper ones linear-lanceolate, all narrowed at base to a short petiole. *Heads* of flowers in a small terminal corymb; *involucre* cylindric, pubescent, the outer leaflets small, acuminate. *Florets* whitish. *Akenes* finely striate; *pappus* plumose, white, or often tawny.

Hab. Great Valley, near Brooke's Mill: rare. *Fl.* September. *Fr.* Octo.

Obs. Collected by D. TOWNSEND, Esq. in 1833, at the above locality,—where, however, it is more rare than the following.

2. K. CRITONIA, *Willd.* Leaves lance-linear, mostly entire and sessile; panicle corymbulose, spreading, many-flowered. *Beck, Bot. p.* 195.

Critonia Kuhnia. *Mx. Am.* 2. *p.* 101.

Root perennial. *Stem* 2 to 3 feet high, slender, striate, roughish-puberulent, often dark purple, corymbosely branched at summit. *Leaves* 1 to 2 or 3 inches long, and 2 or 3 lines to near half an inch wide, alternate, acute at each end, mostly entire, and somewhat revolute on the margin, slightly pubescent, punctate beneath

the lower ones on short petioles, those above sessile. *Heads* of flowers in a rather large panicle consisting of numerous corymbose clusters; *involucre* cylindric, pubescent, containing about 8 or 10 florets, the outer leaflets lanceolate, shorter, the inner ones linear, obtuse, mucronate, 3 nerved, 1 fourth to 1 third longer than the akenes. *Florets* pale yellow, or ochroleucous. *Stamens* and *style* included; *anthers* distinct. *Akenes* about 2 lines long, nearly cylindric, finely striate, pubescent, corneous at base, with the areola sub-lateral; *pappus* plumose, white, or often becoming tawny, about as long as the akene.

Hab. Great Valley, near Brooke's Mill: not common. *Fl.* August. *Fr.* Sept.

Obs. Collected in 1832, by Mr. GEO. W. HALL. One or two additional species have been found in the South.

371. EUPATORIUM. *L. Nutt. Gen.* 64 2.

[From *Eupator*, king of Pontus; who, it is said, first used the plant.]

Heads few- or many- (but not 4-) flowered. *Involucre* of few or many series (rarely simple), oblong. *Corolla* with the limb not distinct from the tube. *Pappus* in a single series, not plumose. *Akenes* mostly 5-angled, not beaked. *Receptacle* naked.

a. *Leaves opposite.* † *Florets white.*

* *Involucre* 3—5-*flowered.*

1. E. ROTUNDIFOLIUM, *L.* Leaves roundish-ovate, subcordate at base, crenate-serrate, sessile, scabrous above, pubescent beneath; involucre about 5-flowered, the inner leaflets acuminate. *Beck, Bot. p.* 196.

ROUND-LEAVED EUPATORIUM. *Vulgò*—Wild Hore-hound.

Root perennial. *Stem* about 2 feet high, slender, roughish-pubescent, corymbose at summit. *Leaves* 1 to near 2 inches long, and 3 fourths of an inch to an inch and half wide, sessile, roundish-ovate, rather acute, subcordate or truncate at base, 3-nerved, resinous-punctate. *Heads* of flowers in a fastigiate corymb; *involucre* very pubescent; outer leaflets lanceolate, shorter, inner ones lance-linear, abruptly acute, or acuminate. *Florets* white. *Style* much longer than the corolla. *Akenes* oblong, 5-angled, dark brown, sprinkled (as in many of the species) with resinous particles; *pappus* scabrous, longer than the corolla, white.

Hab. Woodlands; Mica-slate hills: not common. *Fl.* August. *Fr.* Sept.

Obs. Collected by D. TOWNSEND, Esq. in 1830. The infusion of this is bitter, and is used as a febrifuge, in the South; but is not equal to that of E. *perfoliatum.*

2. E. VERBENÆFOLIUM, *Mx.* Leaves ovate-oblong and lance-ovate, mostly acute, coarsely and irregularly incised-dentate, roughish-pubescent, sessile; involucre 5-flowered, the inner leaflets lance-oblong, not acuminate. *Beck, Bot. p.* 196.

E. teucrifolium. *Willd. Sp.* 3. *p.* 1753. *Pers. Syn.* 2. *p.* 399. *Pursh, Am.* 2. *p.* 513. *Nutt. Gen.* 2. *p.* 135. *Torr. Comp. p.* 284. *Lindl. Ency. p.* 688. Also? *Muhl. Catal. p.* 71. *Bart. Phil.* 2. *p.* 99. *Also?* E. pubescens. *Pers. Syn.* 2. *p.* 400. Not? of *Willd. Muhl. Ell. &c.*

VERBENA-LEAVED EUPATORIUM.

Root perennial. *Stem* 2 to 3 feet high, striate, roughish-pubescent, corymbosely branched at summit. *Leaves* 2 to 4 inches long, and 3 fourths of an inch to an

inch and half wide, sessile, obtuse at base, more or less ovate, tapering gradually to the apex, and mostly erect, coarsely and unequally incised-serrate (occasionally sub-lobed near the base), the serratures or segments rather obtuse,—the upper leaves, especially on the branches, smaller, and mostly entire. *Heads* of flowers somewhat clustered, corymbose; *involucre* very pubescent, the inner leaflets lance-oblong, rather acute, scarcely acuminate, scarious on the margin. *Florets* white. *Style*, &c. resembling the preceding.

Hab. Low swampy grounds; borders of thickets: frequent. *Fl.* Aug. *Fr.* Sept.

Obs. This is somewhat variable in the size and form of the leaves,—the lower ones being sometimes broadish-ovate and rather obtuse. Collected in 1827, by D. TOWNSEND, Esq.

3. E. SESSILIFOLIUM, *L.* Leaves long-lanceolate, or ovate-lanceolate, acuminate, sharply serrate, smooth, punctate beneath, rounded or subcordate at base, sessile, distinct; involucre 5-flowered, the leaflets obtuse, punctate. *Beck*, *Bot. p.* 197.

SESSILE-LEAVED EUPATORIUM.

Root perennial. *Stem* 2 to 3 feet high, slender, corymbose at summit, striate, smooth, the branches and pedicels pubescent. *Leaves* 2 or 3 to 6 inches long, and half an inch to an inch and half wide, tapering to a long slender acute point, sharply and nearly equally serrate, smooth, paler and minutely punctate beneath, sessile, the base very obtuse, often subcordate, and apparently slightly amplexicaul. *Heads* of flowers clustered, corymbose; *involucres* pubescent, the leaflets lance-oblong, obtuse, punctate with numerous brown dots, scarious on the margin. *Florets* white.

Hab. Borders of woodlands, and thickets: frequent. *Fl.* August. *Fr.* Sept.

* * *Involucre more than 5-flowered.*

4. E. PERFOLIATUM, *L.* Leaves connate-perfoliate, lance-oblong, acuminate, crenate-serrate, rugose, very pubescent beneath. *Beck*, *Bot. p.* 198.

E. connatum. *Mx. Am.* 2. *p.* 99. [an Sage.

PERFOLIATE EUPATORIUM. *Vulgò*—Thorough-stem. Bone-set. Indi-

Root perennial. *Stem* 2 to 4 feet high, striate, hirsutely pubescent, corymbose at summit, the branches whitish and very pubescent. *Leaves* 4 to 6 or 8 inches long, and 1 to 2 inches wide, opposite, and completely united at base, or sometimes contracted at base and scarcely connate, (rarely *ternate* and connate), tapering to a slender point, obtusely and nearly equally serrate, rugose and very pubescent, especially on the under side, sprinkled with minute resinous particles. *Heads* of flowers clustered, in large corymbs; *involucres* about 10-flowered, pubescent, the leaflets lance-linear, rather acute. *Florets* white. *Anthers* dark brown.

Hab. Low, swampy grounds: common. *Fl.* July—August. *Fr.* September.

Obs. This species is generally well known for its valuable medicinal properties—being either tonic, cathartic, or emetic, according to the dose, or mode of exhibition. I have employed it extensively, and with much satisfaction,—especially as a tonic.

5. E. AGERATOIDES, *L.* Stem smooth; leaves broad-ovate, acuminate, coarsely and unequally serrate, thin and smoothish, on long petioles; involucre simple, smoothish. *Beck*, *Bot. p.* 198.

E. urticæfolium. *Mx. Am.* 2. *p.* 100. Not of *Willd. Ait. Pers. Lindl. &c.*

AGERATUM-LIKE EUPATORIUM.

Root perennial. *Stem* 2 to 3 feet high, somewhat branched, smooth, the summit and branches pubescent. *Leaves* 2 to 4 or 5 inches long, and 1 to 3 inches wide, ovate, acuminate, coarsely and rather sharply serrate, the base dilated, obtuse and often almost truncate, sometimes abruptly tapering to the petiole, thin, membranaceous, and shining, 3-nerved, sparingly pilose, and ciliate; *petioles* half an inch to 2 or 2 and a half inches long. *Heads* of flowers in terminal cymose corymbs; *pedicels* pubescent, with filiform-subulate *bracts* at base; *involucres* usually 12 to 15-flowered, simple, the leaflets nearly equal, linear-oblong, rather obtuse, slightly pubescent, scarious on the margin, and finely ciliate. *Florets* very white.

Hab. Moist woodlands, and thickets: frequent. *Fl.* Aug—Sept. *Fr.* Sept—Octo.

6. E. AROMATICUM ? *L.* Stem roughish-pubescent; leaves lance-ovate, acute, rather obtusely serrate, roughish, and slightly rugose-veined, on short petioles; involucre sub-simple, pubescent. *Beck, Bot. p.* 198.

Also, E. melissoides. *Florul. Cestr. p.* 86. Not ? of *Willd.* &c.

AROMATIC EUPATORIUM.

Root perennial ? (annual ? *Bigel.*). *Stem* 18 inches to 2 feet high, subsimple, or corymbose at summit, more or less pubescent. *Leaves* an inch and half to 3 or 4 inches long, and 3 fourths of an inch to 2 inches wide, lance-ovate, or oblong-ovate, acute but scarcely acuminate, obtuse at base (the lower ones often sub-cordate), 3-nerved, reticulately veined, subrugose, and rather scabrous; *petioles* 1 fourth of an inch to near an inch long. *Heads* of flowers in small erect corymbs; pedicels very pubescent, with subulate *bracts* at base; *involucres* 8 to 20-flowered; somewhat imbricated, the leaflets nearly equal, lance-linear, pubescent and ciliate. *Florets* very white, rather larger than the preceding.

Hab. Rocky banks; thickets and clearings: frequent. *Fl.* Aug-Sept. *Fr.* Sept–Octo.

Obs. This is somewhat variable—but has considerable general resemblance to the preceding; and, as it is usually found in poorer soils, and on dry rocky banks, may be readily mistaken for starved specimens of it. I have a suspicion that E. *melissoides*, and E. *ceanothifolium*, of Authors, are scarcely more than *varieties* of this.

†† *Florets purple.*

7. E. CŒLESTINUM, *L.* Leaves lance-ovate, or deltoid-oblong, obtusely serrate, roughish-pubescent, petiolate; involucre imbricated; receptacle conic. *Ell. Sk.* 2. *p.* 306.

Cœlestina cærulea. *Less. Syn. p.* 155. *Beck, Bot. p.* 198.

Also ? C. ageratoides. *Lindl. Ency. p.* 690.

Also (*fide Lessing.*), Ageratum corymbosum. *Pers. Syn.* 2. *p.* 402.

CELESTIAL, OR BLUE EUPATORIUM.

Root perennial. *Stem* 18 inches to 2 or 3 feet high, terete, firm, scabrous-pubescent, branching. *Leaves* an inch and half to 3 or 4 inches long, and 3 fourths of an inch to 2 inches wide, obtuse at base, tapering to the apex, 3-nerved, somewhat rugose, scabrous-pubescent, especially on the nerves beneath; *petioles* 1 fourth of an inch to an inch long, pubescent. *Heads* of flowers in rather dense cymose corymbs; *pedicels* with filiform-subulate bracts at base; *involucres* many-flowered

(30 to 60), the leaflets linear-subulate, nerved and striate, slightly scabrous, imbricated. *Florets* light bluish-purple, fragrant. *Akenes* angular, resinous-dotted; *pappus* pilose, scabrous (crown-form, entire, *Lessing*; a membranaceous crown, *Beck.*). *Receptacle* conic, naked, punctate.

Hab. Borders of woods, and thickets; Londongrove: rare. *Fl.* Sept. *Fr.* Octo.

Obs. This pretty species was collected in 1827, by WM. JACKSON, Esq. It is very abundant along the Susquehanna, towards its mouth; but rare in this County. I have not observed the *crown-form* membranaceous pappus—on which, in part, this has been generically separated from *Eupatorium*.

b. *Leaves verticillate: florets purple.*

8. E. PURPUREUM, *L.* Stem mostly fistular, glaucous; leaves in verticils of 4 to 6, lance-oblong, or lance-ovate, acuminate, serrate, more or less rugose-veined and scabrous-pubescent. *Beck, Bot. p.* 197.

PURPLE EUPATORIUM.

Root perennial. *Stem* 3 or 4 to 6 or 7 feet high, simple, more or less fistular, striate, smoothish and generally glaucous-purple. *Leaves* usually in verticils of six, 4 to 6 or 8 inches long, and 1 to 2 inches wide, lance-oblong, acuminate at each end, smoothish above, rugose-veined and roughish-pubescent beneath, on *petioles* half an inch to an inch long. *Heads* of flowers in a large terminal compound corymb; branches and pedicels roughish-pubescent; *involucre* imbricated, mostly purple, the outer leaflets ovate, pubescent, the inner ones lance-linear, longer, mostly obtuse, 3-nerved, minutely ciliate. *Florets* pale purple. *Akenes* linear-oblong, angular, sprinkled with resinous dots; *pappus* hair-like, scabrous.

Var. maculatum. Stem nearly solid, sulcate-striate, more scabrous, with dark purple linear spots; leaves (sometimes ternate) broader and more ovate, more rugose, resinous-dotted and scabrous.
E. maculatum. *Willd. &c.* ICON, *Bart. Am.* 3. *tab.* 102.
Also? E. punctatum. *Pursh, Am.* 2. *p.* 515. *Beck, l. c.*

Hab. Moist low grounds, and thickets: frequent. *Fl.* August. *Fr.* Sept—Octo.

Obs. I think, with Prof. *Hooker*, that E. *maculatum* must be referred to E. *purpureum*,—though it often seems to present a pretty well-marked *variety*. Dr. *Barton* speaks highly of it, as a tonic.

9. E. TRIFOLIATUM? *L.* Stem solid; leaves mostly in verticils of 3, large, lance-ovate, or oblong-ovate, cuneate at base, coarsely serrate. *Beck, Bot. p.* 196.
E. ternifolium? *Ell. Sk.* 2. *p.* 306.
Also? E. verticillatum. *Willd. and the Authors here quoted.*

THREE-LEAVED EUPATORIUM.

Root perennial. *Stem* 3 to 4 feet high, simple, mostly solid with pith, striate, more or less pubescent. *Leaves* usually ternate, sometimes in fours, 3 or 4 to 10 or 12 inches long, and 2 to 4 or 5 inches wide, oblong-ovate, acuminate, very coarsely serrate, entire and abruptly narrowed at base, cuneately decurrent on the petiole, of a thinnish texture, more or less roughish-pubescent, and sprinkled with resinous dots beneath; *petioles* half an inch to 2 inches long. *Heads* of flowers in a terminal corymb which is usually much smaller than in the preceding, and not so purple; in other respects very similar.

Hab. Borders of woodlands, and thickets: frequent. *Fl.* August. *Fr.* Sept.

Obs. I have no doubt this is the E. *verticillatum* of *Elliott*. In its usual appear-

ance it seems sufficiently distinct from the preceding; but it must be confessed, that there are intermediate specimens by which the two are connected, or blended, so as to render it extremely difficult to make a satisfactory discrimination. Prof. *Hooker* is of opinion that both they, and the Synonyms here cited with them, may be safely referred to E. *purpureum*. Some twenty or more additional species are enumerated in the U. States,—and there are a few others known, in the South and West, which appear not to be described. A good monograph of the genus is much wanted,—and would be an acceptable treat to American Botanists.

372. MIKANIA. *Willd. Nutt. Gen.* 643.

[Dedicated to *Joseph Mikan;* a Botanist of Prague.]

Heads mostly 4-flowered. *Involucre* in a single series; leaflets 4 or 5, nearly equal. *Corolla* with the limb campanulate. *Pappus* in a single series, not plumose. *Receptacle* naked.

1. M. SCANDENS, *Willd.* Stem volubile, climbing, smooth; leaves subhastate-cordate, acuminate, repand-dentate. *Beck, Bot. p.* 198. Eupatorium scandens. *Mx. Am.* 2. *p.* 97.

CLIMBING MIKANIA.

Root perennial. *Stem* 3 to 5 or 6 feet long, slender, striate, smoothish, twining *Leaves* an inch and half to 3 or 4 inches long, and 1 to 2 or 2 and a half inches wide, somewhat hastate-cordate, with a conspicuous slender acumination, irregularly repand or angular-dentate, thin, slightly pubescent and scabrous; *petioles* 3 fourths of an inch to 2 or 2 and a half inches long, flat, nerved, opposite. *Heads* of flowers in clustered cymose corymbs, on axillary branches 3 to 6 inches in length,—the branches with a pair of leaves near the corymbs; *pedicels* sparingly bracteate; *involucres* 4 or 5-flowered, the leaflets lance-linear, rather acute, somewhat scabrous-pubescent, scarious on the margin. *Florets* whitish, tinged with pale bluish-purple.

Hab. Swampy thickets, and along rivulets: not common. *Fl.* Aug. *Fr.* Sept.

Obs. This has been found in various parts of the County; but is by no means common. The leaves have a considerable resemblance to those of the common *Buckwheat.* There is another species in the U. States,—scarcely differing from this, except in pubescence: and, indeed, the genus itself,—as *Elliott, Lessing,* &c. have remarked,—is hardly distinct from *Eupatorium.*

VI. ASTER TRIBE. Heads *mostly heterogamous, with pistillate or neutral florets, in one or many series, in the circumference; rarely dioicous.* Corolla *of the perfect florets mostly regular, 5-toothed.* Style, *in the perfect florets, bifid, the branches linear, flattish, mostly with a straight acumination.* ASTEROIDEÆ. *Lessing.*

Sub-Tribe 1. ASTEREÆ. *Heads* never dioicous, mostly heterogamous, with pistillate florets in the circumference, in 1 or several series, bearing ligulate corollas, and with perfect florets in the disk. *Receptacle* mostly without *bracts.*

373. SOLIDAGO. *L. Nutt. Gen.* 660.

[Latin, *solido,* to make firm, or to heal; from its supposed virtues.]

Heads small, few-flowered. *Involucre* imbricated, with the leaflets appressed. *Florets* of the *ray* few (about 5), in a single series, pistillate,—of the *disk* perfect. *Pappus* in a single series, pilose. *Ak-*

enes sub-terete, many-ribbed. *Receptacle* mostly naked, punctate. Root *perennial;* leaves *alternate, more or less lanceolate, or spatulate, never cordate;* inflorescence *generally racemose-paniculate;* florets, *both of* ray *and* disk, *yellow.*

§ 1. *Receptacle naked.* † *Racemes secund.*

* *Leaves sub-triplinerved.*

1. S. CANADENSIS, *L.* Stem villose; leaves lanceolate, serrate, triplinerved, roughish on the upper surface, pubescent beneath; racemes paniculate, recurved; rays short. *Beck, Bot. p.* 188.

CANADIAN SOLIDAGO. *Vulgò*—Golden rod.

Stem 2 to 4 or 5 feet high, erect, striate, villose-pubescent, simple, somewhat corymbose-paniculate at summit. *Leaves* numerous, sessile, 2 or 3 to 5 or 6 inches long, and 1 third of an inch to an inch wide, very acute, or acuminate, narrowed at base, more or less serrate (the upper ones often entire), roughish above, with triple whitish nerves, and a short softish somewhat hoary pubescence, beneath. *Heads* of flowers in secund racemes, on recurved corymbose-paniculate branches; *branches* and *pedicels* pubescent; *bracts* lance-linear, and subulate, pubescent and ciliate; *involucre* smoothish, the leaflets narrow, sublinear, rather obtuse; *florets* of the ray inconspicuous. *Akenes* scabrous-pubescent; *pappus* scabrous, often flexuose, white.

Hab. Hilly woodlands; N. Valley Hill: frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. Collected by D. TOWNSEND, Esq. in 1833.

2. S. GIGANTEA, *Ait.* Stem smooth; leaves lanceolate, serrate, triplinerved, scabrous on the upper surface, margin, and nerves beneath; racemes paniculate; branches and pedicels roughish-pubescent; rays short. *Beck, Bot. p.* 189.
Also ? S. serotina. *Ait. Willd. Pursh, Beck,* &c.

GIGANTIC SOLIDAGO.

Stem 4 to 6 or 7 feet high, striate, smooth, often purplish. *Leaves* 2 to 4 inches long, and 1 third to 3 fourths of an inch wide, acuminate, sessile, or subsessile, reticulately veined, scabrous above, and especially along the margin, also roughish-pubescent on the nerves beneath (sometimes nearly smooth beneath). *Heads* of flowers in secund paniculate racemes; *branches* and *pedicels* roughish-pubescent; *bracts* lanceolate, scabrous-ciliate; *involucre* smoothish, the leaflets lance-oblong, rather acute, minutely ciliate; *rays* rather larger than in the preceding. *Akenes* pubescent.

Hab. Low grounds; borders of thickets: frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. In *Muhlenberg's Herbarium* this is marked "*serotinæ aff.*"—and is, perhaps, not distinct from that species. It has considerable resemblance, also, to the preceding: indeed, Prof. *Hooker* remarks, that "probably all the 'triple-nerved' species might, without violence to nature, merge into one."

3. S. CILIARIS, *Muhl.* Stem smooth; leaves elliptic-lanceolate, acuminate, subtriplinerved, reticulately veined, smooth, scabrous-ciliate on the margin; racemes paniculate; branches and pedicels smooth; bracts ciliate; rays short. *Beck, Bot. p.* 189.
S. pyramidata. *Florul. Cestr. p.* 89. Not of *Pursh, Ell.* &c.

FRINGED SOLIDAGO.

Stem 2 to 3 feet high, angular-striate, smooth, often purple. *Radical leaves* 4 to 6 or 8 inches long, and an inch and half to near 3 inches wide, elliptic, acuminate, sharply serrate, smooth, subcoriaceous, tapering at base to a margined ciliate petiole 2 to 3 or 4 inches long; *stem leaves* varying from elliptic-lanceolate to linear-lanceolate, acuminate, subserrate, scabrous on the margin, narrowed at base to a short margined petiole. *Heads* of flowers in secund paniculate racemes; *branches* and *pedicels* smooth; *bracts* linear-oblong, mostly ciliate, especially near the base; *involucre* smoothish, the leaflets lance-oblong, rather obtuse; *rays* about as large as in No. 2. *Akenes* somewhat pubescent.

Hab. Meadows, fields, and woods: frequent. *Fl.* August. *Fr.* September.

Obs. The species inserted in my Catalogue, under the name of "S. *pyramidata?*" is, I believe, not distinct from this.

* * *Leaves veined.*

4. S. ALTISSIMA, *L.* Stem hirsute; leaves ovate-lanceolate, acuminate, serrate, rugose-veined, very scabrous; racemes spreading, or recurved. *Beck, Bot. p.* 189.
S. rugosa. *Florul. Cestr. p.* 89. Also, *Willd. Pursh, Ell.* &c.

HIGHEST SOLIDAGO.

Stem 3 to 6 or 7 feet high, striate, roughly pubescent, often dark purple. *Leaves* 1 to 3 or 4 inches long, and half an inch to an inch and half wide, varying from lance-oblong to ovate, acute, or acuminate, irregularly serrate, rugose and rough, hirsute on the veins beneath, sessile. *Heads* of flowers in secund spreading racemes, *branches* often recurved, and, with the *pedicels*, pubescent; *bracts* small, lance-oblong, scabrous-ciliate; *involucre* smoothish, the leaflets linear-oblong, rather obtuse; *rays* short. *Akenes* pubescent.

Hab. Low grounds; borders of thickets: frequent. *Fl.* Aug—Sept. *Fr.* Octo.

Obs. This presents several *varieties*,—of which the S. *rugosa*, of Authors, is a very common one.

5. S. NEMORALIS, *Ait.* Stem subtomentose; radical leaves somewhat cuneate, crenate-serrate, petiolate, cauline ones oblanceolate, nearly entire, roughish-pubescent; racemes paniculate. *Beck, Bot. p.* 190.

WOOD, OR GROVE SOLIDAGO.

Whole plant of an ash-colored or greyish aspect,—being clothed with a short cinereous pubescence. *Stem* 1 to 2 or 3 feet high, striate, simple, or corymbosely branched above, (in stunted specimens often much branched from near the base). *Radical leaves* 1 to 4 or 5 inches long, and half an inch to an inch and half wide, varying from lance-oblong to spatulate and obovate, coarsely and sparingly crenate-serrate, tapering at base to a *petiole* 1 to 3 inches long; *stem-leaves* narrower, obovate-lanceolate, or oblanceolate, roughish-puberulent, tapering at base almost to a petiole, entire, or obscurely serrate, the lower ones sometimes distinctly serrate. *Heads* of flowers in secund racemes, often corymbose-paniculate, with the branches recurved (in stunted branched specimens often in small axillary clusters); *involucre* smoothish, the leaflets lance-oblong, obtuse, minutely ciliate-pubescent on the margin; *rays* rather short, spatulate-oblong. *Akenes* pubescent with white hairs.

Hab. Sterile old fields, and borders of woods: frequent. *Fl.* Aug—Sept. *Fr.* Octo.

6. S. ODORA, *Hit.* Stem partially pubescent; leaves linear-lanceolate, entire, smooth, pellucid-punctate, scabrous on the margin; racemes paniculate. *Beck, Bot. p.* 191.

ODOROUS, OR FRAGRANT SOLIDAGO.

Stem about 3 feet high, simple, rather slender, striate, with lines of pubescence decurrent from the base of the leaves. *Leaves* 1 or 2 to 4 or 5 inches long, and 1 fourth to 3 fourths of an inch wide, scarcely narrowed at base, sessile, tapering to an acute point, very entire, smooth, with a conspicuous midrib, and numerous pellucid punctures, minutely scabrous on the margin. *Heads* of flowers in secund racemes, which are mostly spreading or recurved, and form a terminal pyramidal panicle; *branches* and *pedicels* slender, roughish-pubescent; *bracts* small, lance-subulate; *involucre* smoothish, the leaflets lance-linear, rather acute, slightly keeled, scarious on the margin: *rays* oblong, or linear-oblanceolate, rather conspicuous. *Akenes* hairy; *pappus* scabrous.

Hab. Borders of woodlands, and thickets: frequent. *Fl.* August-Sept. *Fr.* Octo.

Obs. Collected by WM. JACKSON, Esq. in 1829. This is a very fragrant, pleasant species—the leaves yielding a volatile oil by distillation, and the flowers making an agreeable tea.

7. S. ULMIFOLIA, *Muhl.* Stem smoothish, striate; leaves elliptic-lanceolate, acuminate, deeply serrate, ciliate, hairy beneath; racemes paniculate; rays short. *Beck, Bot. p.* 190.

ELM-LEAVED SOLIDAGO.

Stem 3 or 4 feet high, often with numerous long slender branches at summit, strongly striate, mostly smooth, with the branches hairy. *Leaves* 2 to 4 or 5 inches long, and 3 fourths of an inch to an inch and half wide, varying from oblong-lanceolate to elliptic-ovate, tapering at base, sessile, incised-serrate (the small ones on the branches entire), scabrous-ciliate, somewhat pellucid-punctate, hairy beneath, especially on the midrib and veins, the upper surface sprinkled with hairs, or finally smoothish. *Heads* of flowers in secund racemes, the racemes often on long slender branches, which are sometimes flaccid and straggling; *branches* pilose; *pedicels* short, smoothish; *bracts* lanceolate, subciliate; *involucre* smooth, the leaflets lance-oblong, rather acute; *rays* small. *Akenes* hairy.

Hab. Low grounds, woods, and thickets: frequent. *Fl.* Aug—Sept. *Fr.* Octo.

Obs. The leaves are somewhat variable in form; but I have seen none which would have suggested to me the name of *ulmifolia*. It is, however, the S. *ulmifolia* of *Muhlenberg's Herbarium*.

8. S. PATULA, *Muhl.* Stem smooth, angular-striate; leaves elliptic, acute, serrate, scabrous on the upper surface, smooth beneath, the radical ones oblong-spatulate; racemes paniculate, spreading. *Beck, Bot. p.* 190.

S. scabra. *Florul. Cestr. p.* 89. Not of *Muhl. Willd.* &c.

SPREADING SOLIDAGO.

Stem 2 to 4 feet high, stout, somewhat angular and sulcate-striate, smooth, dark green, or often purple, branched at summit. *Radical leaves* 3 to 6 inches long, and an inch and half to 3 inches wide, somewhat crenate-serrate, with the serratures rather appressed, subcoriaceous, very scabrous above, smooth beneath, abruptly narrowed to a margined petiole about as long as the leaf; *stem-leaves* gradually smaller, elliptic, acute, serrate, narrowed at base, sessile. *Heads* of

flowers rather large, in secund spreading paniculate racemes; *branches* and *pedicels* roughish-pubescent; *involucre* minutely pubescent, green, the leaflets lance-oblong, keeled, rather acute, sometimes obtuse; *rays* oblong, middle-sized. *Akenes* slightly puberulent and bristly.

Hab. Low grounds; thickets, &c. frequent. *Fl.* August—Sept. *Fr.* October.

Obs. This is the S. *patula*, of Muhlenberg's Herbarium; and is remarkable for the shagreen-like roughness on the upper surface of the leaves,—a circumstance not noticed in any description which I have seen. It is the plant intended by S. *scabra*, in my Catalogue,—and is there erroneously and unaccountably described as having the leaves "scabrous *beneath*."

9. S. ARGUTA, *Ait.* Stem smooth; leaves elliptic-lanceolate, acuminate, acutely and unequally serrate, smooth, the radical ones spatulate-ovate; racemes paniculate. *Beck, Bot. p.* 190.

SHARP (NOTCHED) SOLIDAGO.

Stem 2 to 3 feet high, sulcate-striate, smooth, simple, or virgately branched. *Radical leaves* nearly of the size and form of those in the preceding species, but more sharply serrate, thinner, and smooth on both sides; *stem-leaves* gradually smaller, elliptic-lanceolate, acuminate, sharply serrate, narrowed at base, subsessile, the uppermost ones lanceolate, entire,—all thinnish, chartaceous, smooth, and minutely scabrous on the margin. *Heads* of flowers rather large, racemes secund, in an elongated and rather slender panicle; *branches* and *pedicels* somewhat pubescent; *involucre* smoothish, the leaflets lance-oblong, scarious on the margin, and very minutely ciliate-serrulate; *rays* spatulate-oblong, middle-sized. *Akenes* nearly smooth, or very minutely puberulent.

Hab. Low, shaded grounds; Brandywine: frequent. *Fl.* August. *Fr.* Sept.

Obs. This was collected in 1829, by D. TOWNSEND, Esq. It has considerable general resemblance to the preceding; but is a more delicate plant, with the leaves thinner, more acuminate, very smooth, and sharply serrate.

†† *Racemes erect.*

10. S. BICOLOR, *L.* Stem and leaves hairy; leaves elliptic-lanceolate, acute, the lower ones serrate; racemes erect; leaflets of the involucre obtuse. *Beck, Bot. p.* 191.
Also, S. erecta. *Florul. Cestr. p.* 89. Not of *Pursh, Nutt. Ell.* &c.

TWO-COLORED SOLIDAGO.

Stem 1 to 3 feet high, striate, hairy, mostly simple, sometimes branched at summit, with the branches leafy. *Radical leaves* 2 to 6 inches long, and 1 to 2 inches wide, elliptic-oblong (the young ones often spatulate), acute, serrate, tapering at base to a *petiole* nearly as long as the leaf; *stem-leaves* elliptic-lanceolate, gradually smaller, and less serrate as they ascend, the upper ones entire, all hairy, tapering at base, sessile, or subsessile. *Heads* of flowers rather large, in short axillary racemes, forming altogether a kind of spike, or long dense compound leafy terminal raceme (when the stem is branched at summit, forming a terminal raceme on each branch); *involucre* smoothish, the leaflets oblong, mostly obtuse, scarious on the margin, and minutely ciliate-serrulate, sometimes a little spreading at apex; *rays* middle-sized, whitish, or ochroleucous. *Akenes* striate, sparsely pubescent, finally smooth.

Hab. Woodlands, clearings, & low grounds: frequent. *Fl.* Aug-Sept. *Fr.* Octo.

Obs. The S. *erecta*, of my Catalogue, is nothing but a variety of this.

11. S. PUBERULA, *Nutt.* Stem and leaves minutely pubescent; leaves lanceolate, acute, tapering at each end, mostly entire, sessile, the lower ones subserrate; racemes axillary, erect, condensed; leaflets of the involucre linear-lanceolate, acute. *Beck, Bot. p.* 193.

PUBERULENT SOLIDAGO.

Stem 2 to 3 feet high, simple, terete, striate, very finely pubescent, mostly dark purple. *Leaves* 1 to 3 or 4 inches long, and 1 fourth to 3 fourths of an inch wide, the lower ones rather oblanceolate, tapering to the base, all very minutely pubescent, and ciliate-serrulate or scabrous on the margin. *Heads* of flowers in short erect axillary racemes, forming a kind of compound terminal leafy spike 4 to 8 or 10 inches in length; *branches* and *pedicels* pubescent; *bracts* lance-linear, pubescent; *involucre* puberulent, yellowish, the leaflets linear-lanceolate, acute, minutely pubescent-ciliate; *rays* middle-sized. *Akenes* finely pubescent.

Hab. Swamps, and low grounds; J. D. Steele's: rare. *Fl.* Aug—Sept. *Fr.* Octo.

Obs. In its foliage, this has some resemblance to S. *nemoralis*,—as remarked by Mr. *Nuttall.*

12. S. SQUARROSA, *Muhl.* Stem smooth below, pubescent above; leaves elliptic-lanceolate, acute, serrate, smoothish, scabrous on the margin, the uppermost ones nearly entire, lower ones broad, spatulate-oval; racemes axillary, glomerate; involucre many-flowered, squarrose. *Beck, Bot. p.* 193.

SQUARROSE SOLIDAGO.

Stem 2 to 3 or 4 feet high, stout, simple, striate, smooth below, pubescent at summit. *Radical* and *lower leaves* 3 to 6 inches long, and an inch and half to 3 and a half inches wide, spatulate-oval, acute, serrate, and scabrous-ciliate on the margin, narrowed at base to a margined *petiole* 2 to 4 inches long; *stem-leaves* gradually smaller, elliptic-lanceolate, and lance-oblong, acute, more or less serrate, narrowed at base, sessile, the uppermost ones nearly or quite entire,—all subcoriaceous, smoothish, somewhat scabrous-pubescent on the midrib and principal veins, scabrous on the margin. *Heads* of flowers large, in dense axillary clusters, forming a long leafy compound spike; *branches* and *pedicels* very pubescent; *bracts* lance-oblong, ciliate; *involucre* puberulent, the leaflets numerous, oblong, minutely lacerate-ciliate on the margin, the apex spreading or reflexed, green; *rays* rather elongated. *Akenes* striate, smooth.

Hab. Schuylkill, at Black Rock: not common. *Fl.* August—Sept. *Fr.* Octo.

Obs. Collected by D. TOWNSEND, Esq. in 1829.

13. S. SPECIOSA, *Nutt.* Stem smooth, simple, or virgately branched; leaves lanceolate and ovate-lanceolate, subcarnose and coriaceous, smooth, more or less serrate, scabrous on the margin, the uppermost ones entire, the radical ones large, ovate; racemes erect, paniculate; rays large. *Beck, Bot. p.* 191.

S. sempervirens? *Mx. Am.* 2. *p.* 119. Not of *Ait. Willd. Hook.* &c.

S. integrifolia? *Pers. Syn.* 2. *p.* 449.

S. petiolaris. *Muhl. Catal. p.* 76. *Bart. Phil.* 2. *p.* 121. Not of *Ait.* &c.

HANDSOME SOLIDAGO.

Stem 3 to 5 or 6 feet high, stout, sulcate-striate, smooth, often dark purple. *Radical leaves* 4 to 6 or 8 inches long, and 2 to 4 or 5 inches wide, ovate, more or

less serrate-dentate, on a margined *petiole* 2 to 4 or 5 inches long; *stem-leaves* gradually smaller, varying from elliptic to ovate-lanceolate, and lanceolate, narrowed at base to a short *petiole*, more or less serrate, the upper ones entire, sessile, or subsessile,—all smooth, coriaceous, and scabrous on the margin. *Heads* of flowers rather large, numerous, clustered and racemose on axillary branches, which are somewhat elongated, forming a terminal panicle; *branches* and *pedicels* pubescent; *bracts* lance-oblong, smoothish; *involucre* smoothish, the leaflets oblong, mostly obtuse; *rays* large. *Akenes* striate, smooth.

Hab. Schuylkill, at Black Rock; West Chester: rare. *Fl.* Sept. *Fr.* October.

Obs. Collected by D. TOWNSEND, Esq. in 1830. This appears to be the S. *petiolaris*, of Muhlenberg's Herbarium; but it can hardly be *Aiton's* plant,—if the description may be relied upon. It may, also, be the S. *sempervirens*, of *Mx.*, but certainly not of *Linn. Ait. Hook.* &c. The specimen of S. *sempervirens* mentioned by Prof. *Hooker* (*Flor. Bor. Am.* 2. *p.* 3.) as having been received from *West Chester*, was, in fact, collected in *North Carolina*; and sent to me (labelled S. *limonifolia*) by my obliging friend, the Rev. M. A. CURTIS.

14. S. FLEXICAULIS, *L.* Stem smooth, mostly flexuose, angular; leaves lance-ovate, and elliptic-lanceolate, acuminate, serrate, smoothish above, more or less pilose beneath; racemes axillary, erect, somewhat oblong. *Beck*, *Bot. p.* 192.

CROOKED-STEM SOLIDAGO.

Stem 18 inches to 3 feet high, rather slender, simple, generally flexuose, somewhat angular, striate, smooth, and mostly green. *Leaves* 3 or 4 inches long, and 3 fourths of an inch to near 2 inches wide, elliptic-lanceolate, acuminate, cuneately tapering at base, subsessile, sharply and unequally incised-serrate, smooth above, somewhat pilose on the midrib and veins beneath, scabrous-ciliate on the margin, the uppermost ones entire. *Heads* of flowers middle-sized, in short racemose rather oblong axillary clusters; *branches* and *pedicels* pubescent; *bracts* spatulate-oblong; *involucre* smooth, the leaflets spatulate-linear, obtuse, minutely ciliate; *rays* middle-sized. *Akenes* hairy.

Var. b. *latifolia*, *L.* Leaves broadly ovate, acuminate at each end, sharply laciniate-serrate, pilose beneath.

S. latifolia. *Muhl. Catal. p.* 76. *Bart. Phil.* 2. *p.* 123. *Torr. Comp. p.* 304. *Lindl. Ency. p.* 712. *Eat. Man. p.* 349.

Stem mostly flexuose, angular, smooth. *Leaves* 3 or 4 inches long, and an inch and half to near 3 inches wide, of a thinnish texture, ovate, or broad-elliptic, conspicuously acuminate, sharply deeply and unequally serrate, so as often to appear somewhat laciniate, scabrous on the margin, and somewhat so on the veins of the upper surface, hairy beneath, abruptly narrowed at base to a tapering margined and mostly ciliate *petiole* about as long as the acumination at apex. *Inflorescence* nearly similar to that of the other variety.

Hab. Woodlands; along Brandywine, &c. frequent. *Fl.* Sept. *Fr.* October.

Obs. Collected by D. TOWNSEND, Esq. in 1829. The *var. latifolia* has been made a distinct species by *Muhlenberg*, and others,—and it certainly does often assume a strikingly different appearance in its foliage; but as we find specimens of an intermediate character, which evidently connect the extremes of variation, I have thought it best to reduce them to one species.

15. S. CÆSIA, *L.* Stem smooth, upright, terete, glaucous; leaves lanceolate, acuminate, serrate, smooth; racemes axillary, erect, subglobose. *Beck*, *Bot. p.* 191.

Also, S. axillaris. *Pursh, Am. 2. p.* 542. *Lindl. Ency. p.* 712. *Beck, Bot. p.* 193. *Eat. Man. p.* 349.

GREY-BLUE SOLIDAGO. *Vulgò*—Blue-stemmed Golden Rod.

Stem 1 to 2 or 3 feet high, slender, nearly straight, simple, or sometimes considerably branched, terete, very smooth, mostly dark purple, and withal of a glaucous hue. *Leaves* an inch and half to 3 or 4 inches long, and 1 third of an inch to an inch wide, oblong-lanceolate, acuminate, irregularly serrate, smooth on both sides, scabrous on the margin, subsessile. *Heads* of flowers middle-sized, in numerous axillary and mostly subglobose clusters (sometimes in oblong racemes); *branches* and *pedicels* pubescent; *bracts* subulate; *involucre* smoothish, the leaflets oblong, rather obtuse, minutely pubescent-ciliate on the margin; *rays* middle-sized. *Akenes* pubescent.

Hab. Woodlands, and thickets: common. *Fl.* September. *Fr.* October.

Obs. This is undoubtedly allied to the preceding,—and Prof. *Hooker* has united them; but I am inclined to think they may, with propriety, be continued as distinct species. If, however, they should finally be reduced to *one*, it will then present *three* strongly-marked *varieties*,—somewhat as *Michaux* has given them.

§ 2. *Receptacle bristly-paleaceous.*

16. S. LANCEOLATA, *Ait.* Stem roughish-pubescent, corymbosely branched; leaves lance-linear, very entire, 3-nerved, somewhat scabrous; corymbs terminal, fastigiate; heads clustered. *Beck, Bot. p.* 194. *var.* major. *Mx. Am. 2. p.* 116.
S. graminifolia. *Ell. Sk. 2. p.* 391. *Eat. Man. p.* 347.
Euthamia graminifolia. *Nutt. Gen. 2. p.* 162.

LANCEOLATE SOLIDAGO.

Stem 2 to 4 feet high, angular-striate, with green and yellow stripes, roughish-pubescent (glabrous, *Willd. Bigel. Hook.* &c.), corymbosely branched at summit. *Leaves* 2 or 3 to 5 inches long, and 2 or 3 lines to half an inch wide, acute, sessile, 3- or often somewhat 5-nerved, slightly pubescent, scabrous on the margin and nerves. *Heads* of flowers rather large, aggregated in clusters at the summit of the corymbose branches; *bracts* ovate-lanceolate, ciliate; *involucre* smoothish, shining and slightly viscid, the leaflets lance-oblong, rather obtuse, appressed, deeper green at apex: *rays* rather small. *Akenes* pubescent.

Hab. Moist, low grounds; borders of thickets: frequent. *Fl.* Aug. *Fr.* Octo.

Obs. About 35 additional species, of this formidable genus, have been enumerated in the U. States; some of which, however, are scarcely more than *varieties*.

374. ASTER. *L. Nutt. Gen.* 659.

[Greek, *Aster*, a star; the radiated heads of flowers resembling stars.]

Heads many-flowered. *Involucre* with the leaflets loose and foliaceous, or imbricated, more or less membranaceous and whitish at base, and with a rhomboid herbaceous disk, or green spot, near the apex. *Florets* of the *ray* numerous, in a single series, pistillate,—of the *disk* perfect. *Pappus* simple, scabrous, persistent. *Akenes* subcompressed, cuneate, mostly pubescent. *Receptacle* alveolate. Root *perennial*; leaves *alternate, varying from oblong to linear, sometimes cordate*; inflorescence *generally corymbose-paniculate*; florets *of the* ray *never yellow.*

§ 2. AMELLI.* *Leaflets of the involucre* ciliate, mostly squarrose, the outer ones herbaceous. *Akenes* hairy, or sometimes smooth. *Heads* of flowers large.

1. A. NUDIFLORUS, *Nutt.* Stem smooth, simple, corymbose at summit; leaves sessile, ovate-lanceolate, subacuminate, sharply serrate, the upper surface scabrous; corymb simple, few-flowered; peduncles pubescent, naked, mostly 1-flowered; involucre hemispherical, closely imbricated, the leaflets oblong, ciliate. *Beck, Bot. p.* 183.

NAKED-FLOWERED ASTER.

Stem 2 to 3 feet high, slender, striate, smooth, simple, with a few short spreading corymbose branches at summit. *Leaves* about 3 inches long, and an inch wide, ovate-lanceolate, or lance-oblong, the upper ones not much smaller, acute or subacuminate, serrate, entire and often cuneately tapering towards the base, scabrous on the upper surface and margin, the apex and serratures mucronate, the under surface pilose on the nerves and veins. *Heads* of flowers few, large; *peduncles* half an inch to 2 or 3 inches long, pubescent, often somewhat in threes at the summit of the branches, the lateral ones longest; *involucre* smooth; the leaflets linear-oblong, often slightly spatulate, rather acute, pubescent-ciliate on the margin, the apex deeper green; *rays* palish violet-purple, numerous, lance-linear, longer than the involucre; *disk* yellowish brown. *Akenes* smooth; *pappus* reddish tawny. *Receptacle* alveolate or pitted, the pits with chaffy dentate margins.

Hab. Low grounds; in the Great Valley: rare. *Fl.* August. *Fr.* September.

Obs. This is rather a pretty species, and quite rare, here;—having only been found, as yet, near R. M. Thomas's Mill Dam, in the Great Valley,—where it was collected by D. TOWNSEND, Esq. in 1830.

2. A. NOVÆ ANGLIÆ, *L.* Stem hirsute, corymbose-paniculate at summit; leaves linear-lanceolate, entire, amplexicaul, auriculate at base, scabrous-pubescent; leaflets of the involucre lance-linear, loose, spreading, foliaceous, hairy, longer than the disk. *Beck, Bot. p.* 182.

NEW ENGLAND ASTER.

Stem 3 to 5 or 6 feet high, rather stout, scabrous and hairy, mostly dark purple, often numerous from the same root. *Leaves* 1 to 2 or 3 inches long, and 1 fourth to half an inch wide at base, tapering gradually to the apex, reticulately veined, pubescent, numerous on the stem and branches, the upper ones mostly purplish. *Heads* of flowers numerous, rather large and crowded, in terminal corymbose panicles; *peduncles* half an inch to 3 or 4 inches long, pubescent and leafy; *involucre* scabrous-pubescent, the leaflets long, narrow, lance-linear, acute, 3-nerved, herbaceous, loose and spreading, generally dark purple; *rays* bright deep purple, with a tinge of violet; *disk* yellow. *Akenes* mostly very hirsute. *Receptacle* alveolate, the alveoli with dentate margins.

Hab. Low grounds; Great valley: rare. *Fl.* September. *Fr.* October.

Obs. This is a very ornamental species, and is often introduced into flower gardens. It was first collected in this County by Mr. JOSEPH JACOBS—and subsequently by Mr. JOSHUA HOOPES; but it is by no means common. The leafy panicles are slightly viscid, and emit a pleasant resinous odor.

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* I have mainly adopted *Nees von Esenbeck's* arrangement of our Asters;—although I think, with Prof. *Hooker*, that in the creation of new Genera from them the learned Author has refined his generic characters almost too much, for practical utility. We have no species here, belonging to his first section.

3. A. PATENS, *Ait.* Stem pubescent, loosely paniculate; leaves ovate-oblong, acute, entire, cordate and amplexicaul at base, scabrous-pubescent on both sides; branches of the panicle spreading, clothed with numerous small leaves; leaflets of the involucre loosely imbricated, linear-lanceolate, scabrous, subsquarrose. *Beck, Bot. p.* 183.
A. amplexicaulis. *Mx. Am.* 2. *p.* 114. *Bigel. Bost. p.* 312. Not of *Willd. Pers. Pursh, Torr. Beck,* &c.
A. diversifolius. *Mx.* (*fide Nees. et al. sed qu?*).
A. undulatus. *Ell. Sk.* 2. *p.* 361. *Eat. Man. p.* 39. Also, *Muhl. Catal. p.* 74. Not of *Willd. Ait. Pursh, Torr. Beck,* &c.

SPREADING ASTER.

Stem 18 inches to 2 or 3 feet high, slender, roughish-pubescent, branched above; branches often elongated, slender, spreading, and clothed with minute bract-like leaves (*var. gracilis*, ramis longissimis, foliis parvis. *Hook.*). *Leaves* half an inch to 2 or 3 inches long, and 1 fourth of an inch to an inch wide, ovate-oblong, rather acute, scarcely narrowed towards the base, entire, scabrous and serrulate-ciliate, cordate at base, sessile and amplexicaul. *Heads* of flowers middle-sized, subsolitary on the slender branches; *involucre* minutely scabrous, the leaflets lance-oblong, subacuminate, slightly spreading and deeper green at apex: *rays* purplish blue. *Akenes* very hairy; *pappus* reddish-tawny.

Var. b. *phlogifolius, Nees.* Leaves lance-oblong, mostly narrowed below the middle, auriculate at base, somewhat villose beneath; panicle few-flowered. *Nees, Ast. p.* 49.
A. phlogifolius. *Muhl. Willd. and the Authors here quoted.*

Stem 1 to 2 or 3 feet high, somewhat villose, often simple. *Leaves* mostly larger than in the preceding (sometimes 5 or 6 inches long, and an inch and half wide), more tapering at apex, generally contracted below the middle, cordate, auriculate and a little dilated at base, more villose beneath, and ciliate on the margin. *Heads* of flowers often very few; *rays* violet-purple.

Hab. Moist woodlands: frequent. *Fl.* August—Sept. *Fr.* October.

Obs. I believe the A. *phlogifolius* has been very properly reduced, by Prof. *Nees*, to a *variety* of the A. *patens*. There seems to be great confusion among Authors respecting the A. *diversifolius*, of *Mx.* and the A. *undulatus*, of *Linn. Nees* and others cite Michaux's *diversifolius* as a synonym of the *patens;* but that cannot be correct,—for the lower leaves of the *diversifolius* have winged *petioles. Elliott*, again, says this A. *patens* is the *true undulatus*, of *Linn.* according to *Smith.* I cannot, of course, determine how the fact is; but I shall, for the present, follow those who appropriate the name, *undulatus*, to another plant,—and which I take to be the *true A. diversifolius, Mx.*

§ 3. GENUINI. *Leaflets of the involucre* more or less membranaceous on the margin. *Akenes* smooth, or sparsely pubescent.

a. *Heterophyllous,—or the leaves of different forms.*

4. A. CORDIFOLIUS, *L.?* Stem smooth, racemose-paniculate at summit; leaves cordate, acuminate, serrate, the upper ones spatulate-ovate and lanceolate; petioles margined, ciliate; involucre closely imbricate. *Beck, Bot. p.* 187. Not of *Nees, Ast.*
A. heterophyllus. *Nees, Ast. p.* 55. Also, *Pursh, Am.* 2. *p.* 552. *Lindl. Ency. p.* 710. *Eat. Man. p.* 44.

HEART-LEAVED ASTER.

Stem 1 to 2 or 3 feet high, somewhat flexuose, striate, smooth below, paniculate at summit, with the branches pubescent in lines. *Leaves* 1 to 3 or 4 inches long, and half an inch to 2 and a half inches wide, acuminately tapering at apex, serrate (the acumination entire), slightly scabrous above, the under surface somewhat pilose, often smooth,—the lower leaves cordate and rather unequal at base, on *petioles* 1 to 2 inches long, with narrow ciliated margins,—the upper leaves smaller, ovate, or spatulate-ovate, and lanceolate, contracted at base to short margined petioles. *Heads* of flowers rather small, numerous, in somewhat racemose or compact oblong panicles; *bracts* small; *involucre* smoothish, the leaflets linear-oblong, rather acute, often purple at apex, scarious and minutely pubescent-ciliate on the margin; *rays* about 12, pale purple, or sometimes nearly white. *Akenes* smooth.

Hab. Woodlands: frequent. *Fl.* September. *Fr.* October.

Obs. This is somewhat variable in its minor characters; but it is the A. *cordifolius*, of the American Botanists,—and, I suspect, will scarcely prove to be distinct from the *Linnæan* species of that name,—although *Nees von Esenbeck* so considers it.

5. A. PANICULATUS, *Ait.* Stem smooth, paniculately branched, branches erect, racemose-thyrsoid; leaves oblong- and ovate-lanceolate, serrate, attenuate at apex, the lower ones subcordate, on long petioles, the petioles with narrow smoothish margins; involucre loosely imbricate, smoothish, the leaflets subulate-linear. *Beck, Bot. p.* 187.

PANICULATE ASTER.

Stem 2 to 3 or 4 feet high, striate, smooth, with numerous erect branches above. *Radical leaves* 2 to 5 inches long, and 3 fourths of an inch to 2 inches wide, ovate-oblong, acuminate, serrate, more or less cordate at base, somewhat pilose on both sides, especially beneath, and ciliate on the margin, the *petioles* 2 to 6 inches long, striate, smooth, with narrow margins; *stem-leaves* gradually smaller, ovate-lanceolate, and oblong-lanceolate, with a slender tapering apex, serrate, narrowed rather abruptly at base to a margined petiole,—those on the branches sessile, lanceolate, or linear-lanceolate, acute at each end. *Heads* of flowers rather small, numerous, racemose-paniculate, racemes often compound, or thyrsoid, on the branches; *branches* and *pedicels* pubescent; *bracts* subulate-lanceolate; *involucre* smoothish, the leaflets subulate-linear, acute, with green keel and scarious margins; *rays* pale purple, or bluish, sometimes white; *disk* yellow, or brown. *Akenes* smooth.

Hab. Woodlands; along Brandywine: frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. This is the A. *paniculatus*, of *Muhlenberg's Herbarium*, but not of *Nuttall*; the latter being nothing but a *var.* of A. *undulatus*. The plant inserted in my Catalogue as "A. *lanceolatus?*" appears not to be distinct from this.

6. A. UNDULATUS, *L?* Stem roughish-pubescent, paniculate above, branches spreading, leafy; radical leaves cordate, serrate, petiolate, stem-leaves ovate, subentire, with broad-winged petioles, the upper ones sessile, all subtomentose-pubescent beneath, scabrous above; involucre imbricate, pubescent, the leaflets lance-oblong. *Beck, Bot. p.* 186. A. diversifolius. *Mx. Am.* 2. *p.* 113. *Muhl. Catal. p.* 74. *Ell. Sk.* 2. *p.* 361. *Bigel. Bost. p.* 312. *Florul. Cestr. p.* 90. *Eat. Man. p.* 39.

A. patens. *Bart. Phil.* 2. *p.* 113. Not of *Ait.* &c.
Also, A. paniculatus. *Nutt. Gen.* 2. *p.* 156. Not of *Ait. Muhl.* &c.

UNDULATE ASTER.

Stem 1 to 3 feet high, pubescent and roughish, often purple, paniculate and often bushy at summit, the branches and branchlets (or pedicels) leafy. *Radical leaves* 1 to 2 inches long, and about an inch wide, oblong-cordate, often obtuse, and sometimes reniform, serrate, pubescent, on striate pubescent slightly-margined *petioles* 1 to 3 inches long; *stem-leaves* 1 to 3 or 4 inches long, and half an inch to 2 or 2 and a half inches wide, ovate, acuminate, mostly entire and slightly undulate on the margin, scabrous above, more downy-pubescent beneath, abruptly contracted at base into a broad-winged *petiole*, which is usually dilated and amplexicaul at the insertion (the lower stem-leaves sometimes distinctly cordate at base, and on narrow petioles), the upper leaves oblong-ovate, sessile and amplexicaul. *Heads* of flowers middle-sized; *branches* and *pedicels* pubescent, clothed with small lance-oblong acute leaves, or *bracts; involuere* pubescent, the leaflets lance-oblong, acute, ciliate; *rays* pale violet-purple, or bluish; *disk* yellow, becoming purplish. *Akenes* slightly pubescent, finally smoothish, 5-ribbed.

Hab. Dry woodlands; fence-rows, &c. common. *Fl.* Sept—Octo. *Fr.* Octo.

Obs. The stem and leaves of this usually have a greyish appearance, by reason of the cinereous pubescence.

b. *Homophyllous,—or the leaves all of a similar form.*

7. A. PRENANTHOIDES, *Muhl.* Stem and branches pilose in lines, corymbose-paniculate; leaves spatulate-lanceolate, acuminate, incised-serrate in the middle, auriculate-amplexicaul at base, scabrous above, smooth beneath; involucre loosely imbricate, the leaflets linear, squarrosely spreading at apex. *Beck, Bot. p.* 185.
A. serotinus. *Florul. Cestr. p.* 91. Not of *Willd.* &c.

PRENANTHES-LIKE ASTER.

Stem 1 or 2 to 4 or 5 feet high, angular-striate, often purple, smoothish, sometimes tuberculate, or muricately scabrous, and usually with pilose lines decurrent from the base of the leaves, corymbosely branched above, the branches conspicuously pilose in lines. *Leaves* 2 or 3 to 6 or 8 inches long, and half an inch to an inch and half or 2 inches wide, more or less spatulate-lanceolate, with an entire conspicuous acumination, incised-serrate in the middle, tapering entire and often narrowed almost to a petiole below the middle, a little dilated at the base, sessile, auriculate and amplexicaul, the upper surface and margin scabrous, smooth beneath. *Heads* of flowers rather above the middle size, often numerous, in a spreading corymbose panicle; *involuere* minutely roughish-pubescent, the leaflets linear, acute, spreading at apex; *rays* pale violet-purple, or lilac, sometimes nearly white. *Akenes* cuneate-oblong, nerved, pilose, yellowish.

Hab. Low grounds; along Brandywine: frequent. *Fl.* Sept—Octo. *Fr.* Octo.

Obs. This is evidently allied to the following,—but may, perhaps, be sufficiently distinct. The plant intended by "A. *serotinus?*" in my Catalogue, proves to be a specimen of this.

8. A. PUNICEUS, *L.* Stem hispid, paniculate; leaves oblong-lanceolate, acuminate, appressed-serrate in the middle, sessile, amplexicaul, scabrous above, smoothish beneath; involucre loosely imbricate, the leaflets subulate-linear, nearly equal. *Beck, Bot. p.* 184.

RED (STALKED) ASTER.

Stem 3 to 6 feet high, hispidly scabrous with short conic bristles, mostly purple (sometimes green), paniculately branched. *Leaves* 2 or 3 to 4 or 5 inches long, and 3 fourths of an inch to 2 inches wide, acute, or acuminate, more or less tapering at base, often rather sparingly serrate. *Heads* of flowers rather above the middle size, paniculate; leaflets of the *involucre* linear, with a white membranaceous margin, minutely pubescent-ciliate; *rays* violet-purple. *Akenes* pubescent.

Hab. Swampy thickets, and low grounds: frequent. *Fl.* Sept. *Fr.* October.

Obs. The A. *puniceus*, of *Elliott*,—of which I have received specimens from my friend, the Rev. M. A. CURTIS,—seems to be nearly intermediate between this and the preceding. Our Chester County plant presents several *varieties;* and I have a suspicion it will yet be found, in some of its variations, to be almost too near akin to A. *prenanthoides*.

9. A. MISER, *Nutt.* Stem roughish-villose, sub-simple; leaves cuneate-lanceolate, acute, serrate, scabrous-pubescent, sessile; heads of flowers in short axillary racemes; involucre imbricate, the leaflets oblong, acute; rays small. *Nees, Ast. p.* 111. Not of *Ait.* &c.

MISERABLE, OR STARVED ASTER.

Stem 6 to 12 or 18 inches high, rigid, subtomentose, often purple, generally simple, or with very short axillary branches. *Leaves* 1 to 2 or 3 inches long, and 1 third of an inch to an inch wide, varying from elliptic-lanceolate to oblong- or cuneate-lanceolate, acute, sometimes nearly entire, or obsoletely serrate, thickish and subcoriaceous, scabrous above, and roughish-pubescent beneath. *Heads* of flowers small, clustered in short leafy axillary racemes; *involucre* minutely pubescent, the leaflets oblong, acute, green at apex; *rays* white, small; *disk* brown, or finally purplish. *Akenes* pubescent.

Hab. Sterile banks, N. of Shugart-town: not common. *Fl.* Sept. *Fr.* Octo.

Obs. This has been collected at different times, in the above locality,—and has the appearance of a plant which is stunted by the sterility of the soil.

10. A. PARVIFLORUS, *Nees.* Stem somewhat pilose in lines, paniculate; leaves lanceolate, acute, or acuminate, more or less serrate in the middle, scabrous along the margin, sessile; involucre imbricate, the leaflets linear, acute; rays short. *Nees, Ast. p.* 99.
A. miser. *Of the Authors here quoted,—except Nutt. & Nees.*
Also ? A. divergens, A. diffusus, *and* A. pendulus. *Ait. Nees,* &c.

SMALL-FLOWERED ASTER.

Stem 1 to 3 or 4 feet high, angular-striate, pubescent in lines, sometimes smoothish below, often much branched, the branches slender and leafy, spreading, or pendent. *Radical leaves* spatulate-lanceolate, acute, serrate, narrowed to a petiole at base; *stem-leaves* 1 to 3 or 4 inches long, and 1 fourth of an inch to an inch wide, lanceolate and lance-linear, acuminate, more or less serrate in the middle, the base and acumination entire, smoothish beneath, slightly scabrous on the upper surface, and more so on and near the margin; *branch-leaves* mostly numerous, small, varying from ovate-lanceolate to elliptic and lance-linear, mostly very acute, entire. *Heads* of flowers small, often very numerous, in loose paniculate leafy, and sometimes pendulous, racemes; *branches* and *pedicels* pubescent; *involucre* smoothish, the leaflets linear, rather acute, keel green, margin scarious and minutely ciliate; *rays* white, or tinged with purple, linear, a little longer than

the inner leaflets of the involucre; *disk* often becoming purple. *Akenes* obconic, scabrous-pubescent.

Hab. Old fields; borders of thickets, &c. frequent. *Fl.* Sept. *Fr.* October.

Obs. Several Asters have been described, as *species*, which are so nearly allied to this, that I think the attempt to keep them distinct, only tends to perpetuate the confusion now existing, in relation to them. I have therefore cited them, or some of them, at least, as Synonyms.

11. A. TENUIFOLIUS, *L?* Stem mostly smooth, much branched, branches virgate, with the branchlets subsecund; leaves narrow, lance-linear, tapering at each end, entire, slightly scabrous on the margin; involucre somewhat hemispherical, loosely imbricate, the leaflets linear-oblong, acute, spreading at apex. *Beck, Bot. p.* 181.
Also? A. dumosus, A. ericoides, &c. *of Authors.*

SLENDER-LFAVED ASTER.

Stem 1 to 2 or 3 feet high, smooth, sometimes a little pubescent, with numerous leafy branches. *Radical leaves* 1 to 3 or 4 inches long, and 1 third to 3 fourths of an inch wide, lanceolate, or sometimes spatulate, sparingly serrate, smooth, ciliate, tapering to a *petiole* nearly as long as the leaf; *stem-leaves* 1 to 3 inches long, and 1 to 4 or 5 lines wide, those on the branches smaller, subulate-linear, or oblong. *Heads* of flowers small, numerous, solitary on the leafy peduncles, or branchlets, which are mostly secund on the principal branches; leaflets of the *involucre* linear, or cuneate-oblong, acute, white, with a green rhomboid-lanceolate spot at apex; *rays* white, or pale purple. *Akenes* minutely pubescent.

Hab. Old fields; roadsides, &c. common. *Fl.* August—Sept. *Fr.* October.

Obs. The Asters allied to this, as well as to the preceding species, are so variable, and yet apparently so blended by intermediate specimens, that I have thought it best, with my imperfect means of determining them, to pass them over as *varieties*. We have, however, some small-flowered bushy specimens,—with the stems more pubescent, and the leaves more lanceolate, or elliptic-oblong,—which may be specifically distinct; and in their characters agree partly with A. *coridifolius*, *Mx.* and partly with A. *multiflorus*, *Ait.* as described by *Nees*. But the truth is, they seem to run into each other so that I find it impracticable to draw a satisfactory line of demarcation between them.

12. A. SALICIFOLIUS, *Ait.* Stem smoothish, paniculate; leaves linear-lanceolate, attenuate, sessile, smooth, scabrous on the margin, cauline ones subserrate, upper ones entire; involucre loosely imbricate, the leaflets lance-linear, acute, unequal, often recurved at apex. *Beck, Bot. p.* 182. Not of *Florul. Cestr.*
A. præaltus. *Nees, Ast. p.* 71.

WILLOW-LEAVED ASTER.

Stem 18 inches to 5 or 6 feet high, terete, striate, smoothish, often purple, branched above, the branches and upper part of the stem more or less marked with pilose lines decurrent from the base of the leaves. *Leaves* 1 to 4 inches long, and 2 or 3 lines to half an inch wide,—*radical* ones 1 or 2 inches long, oblong-spatulate, obtuse, mucronate, sparingly crenate-serrate, tapering and ciliate towards the base,—*stem-leaves* 3 or 4 inches long, linear-lanceolate, slender, very acute, remotely and sparingly, but sharply serrate, scabrous on the margin, and sparsely pilose with appressed hairs on the upper surface, sessile and sub-amplexicaul,—*branch-leaves* half an inch to an inch and half long, numerous, narrow, lance-

linear, cuspidate, entire. *Heads* of flowers middle-sized, paniculate, the panicle often somewhat corymbose; *branches* and *pedicels* angular, pilose on the angles; *involucre* smoothish, the leaflets lance-linear, acute, minutely pubescent-ciliate, the apex often spreading, or recurved; *rays* pale bluish-purple; *disk* yellowish, finally purplish-brown. *Akenes* pubescent.

Hab. Margins of swampy rivulets: frequent. *Fl.* September. *Fr.* October.

Obs. Collected by D. TOWNSEND, Esq. in 1833. The plant called "A. *salicifolius?*" in my Catalogue, turned out, as I suspected at the time, to be nothing but A. *amygdalinus*, *Lam.* (*Diplopappus amygdalinus*, of the present work).

13. A. LÆVIS, *L.* Stem smooth, corymbose-paniculate at summit; leaves lincar-lanceolate and lance-oblong, entire, or sub-serrate, subamplexicaul, coriaceous, smooth and shining; involucre imbricate, the leaflets oblong, keeled, acutc, green and thickish at apex. *Beck*, *Bot. p.* 185.

A. lævigatus. *Florul. Cestr. p.* 90. Also? *Willd. and others.*
Also, A. concinnus. *Florul. Cestr. p.* 91. Not? of *Willd. &c.*

SMOOTH, OR POLISHED ASTER.

Stem 2 to 3 feet high, smooth, often dark purple, especially near the base, more or less branched at summit. *Radical leaves* 1 or 2 to 4 inches long, and 3 fourths of an inch to 2 inches wide, oval and spatulate-ovate, or oblong, obscurely crenate-serrate, smooth, scabrous on the margin, narrowed to a margined *petiole* about as long as the leaf; *stem-leaves* 2 to 5 inches long, and 1 third of an inch to an inch and half wide, sessile, subamplexicaul, varying from lance-linear to oblong and ovate-lanceolate, entire and somewhat revolute on the margin, or sparingly incised-serrate, coriaceous, smooth and shining green,—the broader leaves often abruptly narrowed at base to a margined petiole, and sometimes inclining to panduriform; the *branch-leaves* mostly numerous, small, oblong. *Heads* of flowers large, more or less corymbose-paniculate; *involucre* smooth, the leaflets white, with green keel and apex, acute, or acuminate, minutely ciliate; *rays* long, mostly deep violet-purple, sometimes paler; *disk* yellow. *Akenes* ribbed, smoothish.

Hab. Borders of woodlands, and thickets: frequent. *Fl.* Aug—Sept. *Fr.* Octo.

Obs. This is a handsome plant. I have specimens which answer well to the descriptions both of A. *lævis*, and A. *lævigatus*, of Authors; but there are intermediate ones which appear to connect them very intimately: and I am not without suspicions that A. *amplexicaulis*, A. *mutabilis*, A. *rubricaulis*, A. *cyaneus*, and perhaps one or two others, are too nearly akin to this. A. *concinnus*, of my Catalogue, belongs also to this species. The U. States are the principal region of Asters,—in which are enumerated some 60 or 65 additional species,—even as the genus is now restricted; though it is probable a number of them are mere *varieties*.

375. EURYBIA. *Cass. Nees, Ast. p.* 136.

[Perhaps from the Gr. *Eurybias*, broad or wide spreading; in allusion to the leaves.]

Heads many-flowered. *Involucre* subcylindric, with the leaflets closely imbricated, broadish, membranaceously margined, the herbaceous disk at apex narrow. *Florets* of the *disk* with the tube and limb distinct. *Pappus* simple, stiffish, scabrous, persistent. *Akenes* elongated, sublinear, 3 to 5 ribbed, striate, smooth, or slightly pubescent. *Receptacle* alveolate.

1. E. MACROPHYLLA, *Cass.* Stem mostly roughish-pubescent; leaves cordate, and ovate, serrate, mostly scabrous above and hirsute beneath, radical ones very large, cordate, petiolate, cauline ones ovate, contracted at base to a winged petiole, the uppermost ones sessile; involucre roughish-pubescent, the leaflets elliptic-oblong, rather obtuse. *Nees, Ast. p.* 140.

Aster macrophyllus. *L. Willd. Mx. Pers. Pursh, Beck,* &c.
Also? A. divaricatus. *Willd. Sp.* 3. *p.* 2044. *Pers. Syn.* 2. *p.* 446. *Ait. Kew.* 5. *p.* 60. *Muhl. Catal. p.* 75.

LARGE-LEAVED EURYBIA.

Root perennial. *Stem* 18 inches to 2 feet high, rather stout, somewhat angular and striate-sulcate, mostly roughish-pubescent, sometimes nearly smooth, often purple, corymbosely branched, the branches rigid, and, with the upper part of the stem, often flexuose. *Radical leaves* 3 or 4 to 8 inches long, and 2 to 6 inches wide, varying from roundish-cordate to cordate-oblong, acuminate, coarsely crenate-serrate with mucronate serratures, often very scabrous on the upper surface, and hirsute beneath, sometimes nearly smooth and thinnish, the lobes at base often large, and overlapping so as to close the sinus, *petioles* 3 to 6 or 8 inches long; *stem-leaves* much smaller, ovate, and abruptly contracted at base to a winged petiole (the lower ones often cordate, and on narrow petioles),—the uppermost ones sessile. *Heads* of flowers rather large, in a spreading terminal corymb; *involucre* roughish-pubescent, the leaflets pubescent-ciliate; *rays* white, or often purplish. *Akenes* linear, about 3-ribbed, striate, sparsely pilose, finally nearly smooth; *pappus* reddish-tawny.

Hab. Woodlands; clearings, &c. frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. There are 2 or 3 *varieties* of this;—in one of which the leaves are thickish, somewhat rugose and very scabrous,—in another thinner, and nearly smooth.

2. E. CORYMBOSA, *Cass.* Stem smooth, dichotomously corymbose at summit; leaves cordate and ovate, conspicuously acuminate, sharply serrate, smoothish, petiolate; involucre smoothish, the leaflets linear-oblong, obtuse, pubescent-ciliate on the margin, the exterior ones ovate. *Nees, Ast. p.* 143.

Aster corymbosus. *Ait. Willd. Pursh, Beck,* &c.

CORYMBOSE EURYBIA.

Root perennial. *Stem* about 2 feet high, slender, terete, often flexuose, smooth, sometimes purple, branched at summit, the branches somewhat dichotomous, and forming a subfastigiate corymb. *Leaves* 2 to 4 or 5 inches long, and 1 to 2 or 2 and a half inches wide, thinnish and nearly smooth,—the lower ones cordate, strongly and unequally serrate, on naked *petioles* 1 to 2 inches long,—the upper ones ovate, or ovate-lanceolate, on shorter petioles (which are sometimes margined),—all acuminate, the lower ones remarkably so. *Heads* of flowers middle-sized, often few, in a terminal corymb; *branches* more or less pubescent in lines; *involucre* smoothish, the leaflets pubescent on the margin, the outer ones shorter, ovate, and ovate-oblong, the inner ones narrow, sublinear, and almost wholly membranaceous; *rays* white. *Akenes* cuneate-linear, striate, sparsely pilose; *pappus* reddish-tawny.

Hab. Dry open woodlands: frequent. *Fl.* July—August. *Fr.* September.

Obs. *Nees von Esenbeck* enumerates 2 or 3 other species as natives of the U. States; but I suspect they will prove to be *varieties* of E. *macrophylla.* The genus, itself, is scarcely distinct from Aster.

376. SERICOCARPUS. *Nees, Ast. p.* 148.

[Greek, *Serikos*, silky, and *Karpos*, fruit; descriptive of the akenes.]

Heads few-flowered. *Involucre* oblong, or ovoid, with the leaflets imbricated, broad, whitish and sub-cartilaginous at base, the apex herbaceous, thickened and often spreading. *Florets* of the *ray* few (about 5), distant, broadish,—of the *disk* subcylindric, with the tube and limb confluent. *Pappus* simple, stiffish, scabrous, persistent. *Akenes* short, obversely pyramidal, densely silky-pilose. *Receptacle* small, alveolate, irregular.

1. S. SOLIDAGINEUS, *Nees.* Stem smooth, angular, subsimple; leaves spatulate-linear, obtuse, entire, smooth, scabrous on the margin; corymb small, terminal, fastigiate; involucre oblong, subcylindric, squarrose; rays as long as the involucre. *Nees, Ast. p.* 149.
Aster solidagineus. *Mx. Am.* 2. *p.* 108. *Bigel. Bost. p.* 308.
A. solidaginoides. *Willd. Pers. Pursh, Ell. Beck,* &c.

SOLIDAGO-LIKE SERICOCARPUS.

Plant pale or yellowish green. *Root* perennial. *Stem* about 2 feet high, often several from the same root, slender, angular, smooth, nearly simple, or with a few short corymbose branches at summit. *Leaves* 1 to 2 inches long, and 2 to 4 or 5 lines wide, sublinear, or spatulate-linear, obtuse, entire, narrowed at base, sessile, obscurely punctate and 3-nerved, smooth with the margin scabrous. *Heads* of flowers mostly few, oblong, subcylindric, or slightly turbinate, somewhat clustered in a small terminal fastigiate corymb; *involucre* smooth, the leaflets oblong, obtuse, rigid, subcartilaginous and whitish at base, the outer ones green and subsquarrose at apex; *rays* white. *Akenes* clothed with hoary shining appressed hairs; *pappus* white.

Hab. Moist woodlands: not very common. *Fl.* August—Sept. *Fr.* October.

Obs. This has been found in various parts of the County,—but is by no means common.

2. S. CONYZOIDES, *Nees.* Stem slightly pubescent, terete, corymbose at summit; leaves elliptic, or lance-oval, acute at each end, ciliate, the lower ones serrate towards the apex, narrowed to a petiole at base; involucre turbinate, squarrose, mostly naked at base; rays shorter than the involucre. *Nees, Ast. p.* 150.
Aster marilandicus. *Mx. Am.* 2. *p.* 108.
A. conyzoides. *Willd. Pers. Pursh, Ell. Bigel. Beck,* &c.

CONYZA-LIKE SERICOCARPUS.

Root perennial. *Stem* 1 to 2 feet high, often 2 or 3 from the same root, rather slender, but rigid, terete, smoothish and often purple below, pubescent towards the summit. *Leaves* 1 to 3 inches long, and 1 third of an inch to an inch and half wide, varying from elliptic-lanceolate to lance-obovate, somewhat scabrous above, smoothish beneath, ciliate on the margin, the upper ones sessile and mostly entire, the radical ones coarsely and sparingly serrate towards the apex, tapering at base to a margined ciliate *petiole* nearly as long as the leaf. *Heads* of flowers oblong, subturbinate; *branches* roughish-pubescent; *involucre* smooth, the leaflets oblong, often rather acute, whitish at base, green and subsquarrose at apex, finely ciliate-serrulate on the margin; *rays* white. *Akenes* short, silky-villose; *pappus* reddish tawny.

Hab. Woodlands, and clearings: frequent. *Fl.* July—Sept. *Fr.* Sept—Octo.

Obs. There is one other species in the U. States.

377. ERIGERON. *L. Nutt. Gen.* 657.

[Greek, *Er*, spring, and *Geron*, an old man; the plant being hoary in the spring.]

Heads many-flowered. *Involucre* imbricated, the leaflets narrow. *Florets* of the *ray* in several series, numerous, very narrow. *Pappus* mostly simple. *Receptacle* naked, punctate.

1. E. CANADENSIS, *L.* Stem hirsute, paniculate; leaves lance-linear, mostly entire, ciliate; heads of flowers small, numerous, racemose on the branches; rays minute. *Beck, Bot. p.* 180.

CANADIAN ERIGERON. *Vulgò*—Horse-weed. Butter-weed.

Root annual. *Stem* 6 inches to 5 or 6 feet high, sulcate-striate, very hairy, much branched above. *Leaves* 1 to 3 or 4 inches long, and 1 line to near half an inch wide, lance-linear, acute, tapering at base, sessile, hirsute and ciliate, the lower ones sparingly dentate. *Heads* of flowers small, numerous, loosely racemose on the branches, forming an oblong panicle; *branches* and *pedicels* hirsute, slender, with subulate-linear leaves or *bracts* at base; leaflets of the *involucre* narrow, lance-linear, acute, membranaceous on the margin, somewhat pilose and ciliate; *rays* white, capillary, scarcely longer than the pappus. *Akenes* oblong, sprinkled with short hairs, whitish; *pappus* simple, pilose, the hairs numerous, scabrous, pale straw-color.

Hab. Fields, roadsides, &c. common. *Fl.* August—Sept. *Fr.* Sept—Octo.

Obs. A common weed, and very variable in size. The E. *pusillus*, of *Nuttall*, is perhaps scarcely more than a *variety*.

2. E. STRIGOSUS, *Muhl.* Stem hairy, corymbose-paniculate; leaves lanceolate, attenuate at base, dentate, or entire, the radical ones spatulate-lanceolate; rays spreading, scarcely twice as long as the involucre. *Beck, Bot. p.* 180.

Also? E. integrifolium. *Bigel. Bost. p.* 302. *Torr. Comp. p.* 289. *Beck, Bot. p.* 179. *Eat. Man. p.* 135.

Also? E. nervosum. *Pursh, Am.* 2. *p.* 534. *Eat. l. c.* Not of *Willd.*

STRIGOSE ERIGERON. *Vulgò*— Flea-bane. Daisy.

Root biennial? *Stem* 2 to 3 or 4 feet high, angular and sulcate-striate, more or less hairy, corymbosely branching above, sometimes simple, or with a small corymb at summit. *Leaves* 1 to 3 inches long, and 1 eighth to 3 fourths of an inch wide, more or less pubescent,—the *radical* and *lower* ones somewhat spatulate-lanceolate, sparingly dentate, 3-nerved, attenuate at base to a margined *petiole* nearly as long as the leaf,—the *stem-leaves* varying from lanceolate to oblong and lance-linear, acute, sparingly dentate, or entire, often 3-nerved, somewhat ciliate, sessile. *Heads* of flowers rather small, in terminal corymbs at the summit of the branches; leaflets of the *involucre* lance-linear, acute, minutely pubescent; *rays* white, narrow, sub-linear. *Akenes* oblong, angular, or ribbed, sparsely pilose; *pappus* white, the hairs few, brittle.

Hab. Pastures, and upland meadows: common. *Fl.* June—Aug. *Fr.* July—Sept.

Obs. This is also a very common, and worthless weed,—especially in the first crop of our upland meadows, after a course of grain crops. We have what ap-

pears to be the E. *integrifolium*, of *Bigelow*; but it is so blended with this, by intermediate specimens, that I suspect it is nothing more than a *variety*.

3. E. philadelphicus, *L.* Stem pubescent, weak, simple, corymbose at summit; leaves lance-oblong, subserrate, semiamplexicaul, the lower ones cuneate-oblong; peduncles elongated, clavate; rays capillary, more than twice as long as the involucre. *Beck, Bot. p.* 179.
Also? E. purpureus, *of the Authors here quoted.*

Philadelphian Erigeron.

Root perennial? *Stem* 2 to 3 feet high, sulcate-striate, pubescent, hoary and subvillose near the base, simple, or with a small corymb at summit. *Radical leaves* 3 to 6 inches long, and 1 to 2 inches wide, spatulate-lanceolate, or oblong, crenate-serrate, or sometimes nearly entire, thin and membranous, pubescent, cuneately tapering at base to a winged *petiole* about as long as the leaf;—*stem-leaves* gradually smaller, lance-oblong, acute, sparingly serrate, or entire, sessile and amplexicaul, the lower ones cuneately narrowed at base, the upper ones often dilated and cordate-amplexicaul at base,—all thin, more or less pilose and ciliate. *Heads* of flowers middle-sized, mostly few, in a terminal corymb; *peduncles* leafless, pubescent, thickened at summit; leaflets of the *involucre* lance-linear, acute, membranaceous at apex and on the margin, pubescent; *rays* pale purple, or flesh-colored, very narrow and numerous. *Akenes* oblong, sparsely hispid; *pappus* whitish, the hairs few.

Hab. Woodlands; along Brandywine: frequent. *Fl.* June–Aug. *Fr.* July–Sept.

Obs. Judging from all the Erigerons which I have seen, I incline to think that E. *purpureus*, and E. *philadelphicus*, may be safely reduced to one species.

4. E. pulchellus, *Mx.* Hairy and canescent; radical leaves spatulate, entire, or subserrate, cauline ones few, distant, lance-oblong, entire; heads large, few; rays linear, more than twice as long as the involucre. *Hook. Am. 2. p.* 19.
E. bellidifolium. *Willd. and most of the Authors here cited.*

Handsome Erigeron.

Whole plant somewhat hoary. *Root* perennial, stoloniferous. *Stem* 9 to 18 inches high, striate, simple. *Radical leaves* 1 to 3 inches long, and 3 fourths of an inch to an inch and half wide, spatulate, and obovate, obtuse, often entire, narrowed to a margined *petiole*, very hairy, especially on the nerves and petiole beneath; lower *stem-leaves* spatulate-oblong, subserrate, the upper ones smaller, distant, lance-oblong, acute, entire, or denticulate, sessile and subamplexicaul. *Heads* of flowers large, few (2 or 3 to 5, rarely 7 or 9), in a loose terminal corymb, the lower *peduncles* axillary, long and flaccid; *involucre* pubescent, the leaflets lance-linear, acute; *rays* pale bluish-purple, lance-linear, mostly bidentate at apex. *Akenes* oblong, compressed, smoothish; *pappus* whitish, or pale tawny, the hairs numerous, scabrous.

Hab. Borders of woods, and thickets: frequent. *Fl.* May–June. *Fr.* June–July.

5. E. heterophyllus, *Muhl.* Radical leaves roundish-ovate, coarsely and deeply dentate, petiolate, cauline ones lanceolate, acute, serrate in the middle; rays the length of the involucre; pappus double. *Beck, Bot. p.* 180.
E. annuus. *Hook. Am. 2. p.* 20. Also, *Pers. Syn. 2. p.* 431.
Aster annuus. *Ait. Kew. 5. p.* 59. Also, *Willd. Sp. 3. p.* 2041.
Stenactis annua. *Nees, Ast. p.* 273.

VARIOUS-LEAVED ERIGERON.

Root biennial? *Stem* 2 to 3 or 4 feet high, striate, often angular, more or less hirsute, sometimes nearly smooth below, corymbose at summit. *Radical leaves* 2 to 4 inches long, and nearly as wide as long, ovate, somewhat scabrous and pilose, coarsely serrate-dentate, the teeth mucronate, *petioles* about twice as long as the leaves, narrow-margined, dilated at base; *stem-leaves* gradually smaller, lanceolate, acute, with 3 or 4 coarse serratures in the middle, pilose on the nerves, and ciliate on the margin, cuneately tapering at base, sessile,—the lower ones often ovate, and on margined petioles. *Heads* of flowers rather small, or middle-sized; *peduncles* subterminal, axillary, corymbose, rather slender, hairy, leafless, or with a few lance-subulate appressed *bracts; involucre* pilose, the leaflets lance-linear, acute, with membranaceous margins; *rays* white, or tinged with purple, very narrow, linear. *Akenes* oblong, compressed, hirsute; *pappus* whitish, double, the outer one short, subpaleaceous.

Hab. Pastures, and waste places: frequent. *Fl.* June—July. *Fr.* August.

Obs. Some 8 or 10 additional species have been enumerated in the U. States;—though I suspect a portion of them require to be revised.

378. DIPLOPAPPUS. *Cass. Less. Syn. p.* 163.

[Gr. *Diplos*, double, & *Pappos*, pappus; descriptive of that portion of the florets.]

Heads many-flowered. *Involucre* imbricated. *Florets* of the *ray* pistillate, in a single series,—of the *disk* perfect, with the *corolla* regular. *Pappus* double. *Akenes* not beaked. *Receptacle* alveolate.

1. D. LINARIIFOLIUS, *Less.* Stem terete, suffruticose, simple, or subcorymbose at summit; leaves linear, entire, keeled, rigid, serrulate-ciliate on the margin; involucre somewhat loosely imbricate, the leaflets lance-linear, obtuse. *Hook. Am. 2. p. 21.*
Aster linariifolius. *Mx. Willd. Pursh, Ell. Bigel. Beck,* &c. ICON, *Bart. Am. 2. tab.* 104.
Also, A. rigidus. *Mx. Willd. Muhl. Pursh, Torr.* &c.
Chrysopsis linariifolia. *Nutt. Gen. 2. p.* 152.
Diplostephium linariifolium. *Nees, Ast. p.* 199.

LINARIA-LEAVED DIPLOPAPPUS.

Root perennial. *Stem* 9 to 18 inches high, slender, suffruticose, rigid, roughish-puberulent, often purple, simple, or with a few short corymbose branches at summit. *Leaves* about an inch long, and 1 or 2 lines wide, sessile, linear, abruptly acute, keeled, coriaceous and rigid, very scabrous on the margin, often glaucous beneath. *Heads* of flowers rather large, solitary and terminal on the branches; *branches* erect, crowded, or subumbellate, hoary-pubescent and clothed with small subulate-linear leaves; *involucre* minutely puberulent, the leaflets lance-linear, obtuse, slightly keeled, pubescent-ciliate on the margin especially at apex, the apex mostly tipt with dark purple; *rays* violet-purple; *disk* yellow. *Akenes* densely clothed with a whitish silky villus; *pappus* white, or slightly tawny, in a double series, both series setaceous, the outer one nearly as long as the akene.

Hab. Hilly, rocky woodlands: frequent. *Fl.* September. *Fr.* October.

2. D. AMYGDALINUS, *Less.* Stem striate-angular, smoothish, corymbose-fastigiate at summit; leaves lanceolate, acuminate, attenuate at base, subsessile, entire, scabrous on the margin, smooth beneath; in-

volucre somewhat loosely imbricate, the leaflets linear-lanceolate, rather obtuse. *Hook. Am.* 2. *p.* 23.
Also, D. umbellatus. *Hook. Am.* 2. *p.* 22.
Aster amygdalinus. *Mx. Pers. Pursh, Torr. Beck*, &c.
A. umbellatus. *Ait. Willd. Muhl. Bart. Bigel.* &c.
Chrysopsis amygdalina. *Nutt. Gen.* 2. *p.* 153.
Doellingeria amygdalina. *Nees, Ast. p.* 179.
Also, D. umbellata. *Nees, Ast. p.* 178.

AMYGDALUS-LIKE DIPLOPAPPUS.

Root perennial. *Stem* 2 to 4 feet high, angular-striate, smooth, or sometimes scabrous on the angles, often purplish, branched at summit, the branches corymbose-fastigiate. *Leaves* an inch and half to 4 inches long, and 1 third of an inch to an inch wide, lanceolate and lance-oblong, acuminate, smooth beneath, somewhat scabrous above, and especially along the margin, which is entire and slightly revolute, narrowed at base to a very short petiole. *Heads* of flowers middle-sized, often numerous, in a level-topped corymb; *branches* angular and more or less scabrous; *peduncles* slender, scabrous-pubescent, naked, or with a few small subulate-lanceolate *bracts; involucre* slightly pubescent, the leaflets linear-lanceolate, rather obtuse, with a narrow membranaceous ciliate margin; *rays* about 12, white, or ochroleucous; *disk* yellowish. *Akenes* 3 or 5-ribbed, somewhat hirsute; *pappus* whitish, or sometimes reddish-tawny, the outer series short, the hairs of the inner one slightly thickened at apex.

Hab. Low grounds; moist thickets, &c. frequent. *Fl.* Aug—Sept. *Fr.* Octo.

Obs. The angles, or ridges, on the stem are often more or less scabrous, and the leaves vary a little; but it seems to be refining entirely too much, to make two species of this,—as proposed by *Nees von Esenbeck.*

3. D. CORNIFOLIUS, *Less.* Stem terete, smoothish, subflexuose, sparingly and dichotomously corymbose-paniculate at summit; leaves elliptic, acuminate, sub-cuneate at base, subsessile, entire, ciliate-hirsute on the margin, hairy on the veins beneath; involucre imbricate, the leaflets oblong-lanceolate, rather obtuse, ciliate.

Aster infirmus. *Mx. Am.* 2. *p.* 109.
A. humilis. *Willd. Sp.* 3. *p.* 2038. *Pers. Syn.* 2. *p.* 445. *Pursh, Am.* 2. *p.* 548. *Ell. Sk.* 2. *p.* 366. *Torr. Comp. p.* 300. *Florul. Cestr. p.* 90. *Lindl. Ency. p.* 708. *Beck, Bot. p.* 188. *Eat. Man. p.* 38.
A. cornifolius. *Muhl. Catal. p.* 74. *Bart. Phil.* 2. *p.* 114. *Bigel. Bost. p.* 313. Also, *Willd. Sp.* 3. *p.* 2039. *Pers. l. c. Pursh, l. c. Lindl. l. c. Eat. l. c.*
Chrysopsis humilis. *Nutt. Gen.* 2. *p.* 153.
Doellingeria cornifolia. *Nees, Ast. p.* 181.

CORNUS-LEAVED DIPLOPAPPUS.

Root perennial. *Stem* 1 to 2 feet high, slender, terete, striate, smooth, or sparingly pilose in decurrent lines from the base of the leaves, often flexuose. *Leaves* 2 to 4 inches long, and 2 thirds of an inch to 2 inches wide, elliptic, or subrhomboid-oval, acuminate, entire, somewhat cuneate at base (upper ones lanceolate, lower ones often spatulate, obtuse), subsessile, reticulately and rather prominently veined, nearly smooth above, roughly pilose on the margin, midrib and veins beneath. *Heads* of flowers middle-sized, generally few, corymbose-paniculate, often in pairs, or the branches dichotomous; *branches* and *peduncles* pu-

bescent, nearly naked, or the leaves and bracts small; *involucre* pubescent; *rays* about 8, white, or ochroleucous, broadish: *disk* yellowish. *Akenes* rather large, compressed, subcuneate, about 5-ribbed, smooth, brown; *pappus* reddish-tawny, the outer series short, the hairs of the inner one thickened at apex.

Hab. Woodlands; clearings, &c. common. *Fl.* August—Sept. *Fr.* Octo.

4. D. MARIANUS, *Less.* Stem and leaves somewhat silky-lanuginous; leaves sessile, elliptic-oblong, rather obtuse, remotely denticulate, the lower ones spatulate-lanceolate, attenuate to a petiole at base; corymb simple; peduncles and involucre glandular-pubescent, viscid.

Inula mariana. *Mx. Am.* 2. *p.* 122. *Willd. Sp.* 3. *p.* 2099. *Pers. Syn.* 2. *p.* 451. *Ait. Kew.* 5. *p.* 80. *Muhl. Catal. p.* 76. *Pursh, Am.* 2. *p.* 531. *Bart. Phil.* 2. *p.* 108. *Torr. Comp. p.* 291. *Lindl. Ency. p.* 714.

Chrysopsis mariana. *Nutt. Gen.* 2. *p.* 151. *Ell. Sk.* 2. *p.* 335. *Beck, Bot. p.* 177. *Eat. Man. p.* 94.

MARYLAND DIPLOPAPPUS.

Root perennial. *Stem* 1 to 2 feet high, simple, terete, often purple, sparingly clothed with long soft hairs. *Leaves* loosely clothed with long silky-lanuginous canescent hairs, especially on the under side, remotely serrate-denticulate, rather obtuse, or sometimes acute, mucronate with a short gland-like point,—the *radical* and *lower* ones 2 to 4 or 5 inches long, and 2 thirds of an inch to near an inch and half wide, spatulate-lanceolate and lance-oblong, narrowed at base to a petiole,—the *upper* ones smaller, elliptic and ovate-oblong, sessile, often entire. *Heads* of flowers rather large, few, in a simple terminal subumbellate corymb (sometimes a few lateral axillary peduncles); *peduncles* 1 to 2 inches long, rather slender, sulcate-striate, glandular-pubescent, nearly leafless, or with a few small *bracts*; *involucre* glandular-pubescent, the leaflets linear-lanceolate, acute, with membranaceous margin, and green keel at apex; *rays* yellow, spatulate-linear; *disk* yellow. *Akenes* ovoid-oblong, hirsute, reddish-brown, or purplish; *pappus* yellowish, or pale tawny, the outer series short, the hairs of the inner one scabrous, scarcely thickened at apex.

Hab. Sandy soils; Oxford; Diamond Rock: rare. *Fl.* September. *Fr.* Octo.

Obs. This was collected near Oxford, in 1828, by D. TOWNSEND, Esq.—and also the present year (1836), at Diamond rock, on the N. Valley hill, by Mr. ALBERT TOWNSEND; but it is quite rare. The genus, as I understand it to be now constituted, seems to be rather an arbitrary one,—and embraces plants of a very dissimilar appearance;—of which some twelve, or more, additional species have been found in the U. States. The *true Chrysopsides*, of *Nuttall* and *Elliott*—with *yellow flowers*,—present a very natural groupe.

Sub-Tribe 2. INULEÆ. *Heads* never dioicous, when heterogamous the marginal florets pistillate, with ligulate corollas, the rest perfect. *Anthers* caudate. *Pappus* various, the rays never connate, occasionally none. *Receptacle* mostly without *bracts*.

379. INULA. *L. Nutt. Gen.* 658.

[A name of obscure and uncertain derivation.]

Heads heterogamous, many-flowered. *Involucre* loosely imbricated, the outer leaflets foliaceous. *Florets* of the *ray* very numerous, linear. *Anthers* bisetose at base. *Pappus* simple. *Akenes* not beaked. *Receptacle* naked.

1. I. Helenium, *L.* Leaves oblong-ovate, denticulate, rugose, softly tomentose beneath, sessile and amplexicaul; involucre tomentose, the leaflets ovate. *Beck, Bot. p.* 176.

Vulgò—Elecampane.

Gallicè—Aunée. *Germ.*—Der Alant. *Hisp.*—Enula campana.

Root perennial, thick, branching. Stem 3 to 5 feet high, stout, sulcate, pubescent, branching above. *Leaves* 9 to 18 inches long, and 4 to 6 or 8 inches wide, ovate-oblong and lance-ovate, acute or acuminate, denticulate, hoary-tomentose beneath,—the radical ones petiolate, cauline ones amplexicaul. *Heads* of flowers large, solitary, terminal, subcorymbose; *peduncles* stout, sulcate-striate, densely tomentose; inner leaflets of the *involucre* sublinear, scarious, the outer ones ovate, tomentose; *rays* deep yellow, long, narrow, linear, trifid at apex; *disk* yellow. *Anthers* caudate, or produced at base into 2 setaceous appendages. *Akenes* linear-oblong, quadrangular, striate, smooth; *pappus* pale tawny, simple, scabrous, the hairs united in small parcels at base.

Hab. About houses, roadsides, &c. frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This foreigner has become naturalized about many old settlements. The *root* is mucilaginous; and is a popular ingredient in the preparation of pectoral syrups. It is said, also, to be one of the countless quack nostrums for the prevention and cure of *Hydrophobia.*

Sub-Tribe 7. Melampodieæ. *Heads* dioicous, subdioicous, or radiate with the disk staminate, and the ray pistillate in a single series. *Pappus* 2-horned, or 0. *Receptacle* mostly bracteate.

380. POLYMNIA. *L. Nutt. Gen.* 697.

[So named from one of the Muses; but the reason does not appear.]

Heads rather small. Leaflets of the *involucre* in a double series, concave,—the outer series 4 or 5-leaved, spreading, larger than the many-leaved inner one. *Corolla* of the ray ligulate. *Style* of the disk pubescent above, bifid at apex. *Akenes* obovoid, subcompressed, 3-ribbed. *Pappus* 0. *Receptacle* paleaceous.

1. P. canadensis, *L.* Viscid-pubescent; leaves angulate and hastate-lobed, acuminate, denticulate, the lower ones pinnatifid; rays very small, trifid. *Beck, Bot. p.* 208.

Canadian Polymnia.

Root perennial. *Stem* 2 to 4 or 5 feet high, angular-striate, scabrous-pubescent and somewhat viscid, branching. *Leaves* 4 to 8 or 10 inches long, and 3 to 6 inches wide, very thin, roughish-pubescent, mostly 3-lobed and rather dilated towards the apex, and deeply hastate-lobed at base, repand-denticulate, petiolate, often alternate,—the lower ones deeply pinnatifid, with stipule-like amplexicaul appendages at the base of the petioles. *Heads* of flowers small, somewhat hemispheric, loosely paniculate; *peduncles* slender, glandular-pubescent; outer leaflets of the *involucre* ovate and linear-lanceolate, foliaceous, glandular-pubescent and viscid, ciliate, the inner leaflets oblong, scarious, ciliate at apex; *rays* white, or ochroleucous (yellow, *Ell.*), scarcely 1 third of an inch long, obovate-cuneate, obtusely 3-lobed at apex; *disk* pale yellow. *Akenes* (of the ray-florets, at least) obovoid, subcompressed, smooth, dark brown, or nearly black, with a prominent rib on each margin, and one on the inner face, crowned at summit with a whitish protuberant ring; *pappus* none.

Hab. Along Brandywine ? very rare. *Fl.* August. *Fr.* September.

Obs. This was formerly collected along the west branch of the Brandywine, by Mr. John Jackson,—and transferred to his Botanic Garden. It has not been found growing wild, in this County, for a number of years; and I presume it is now very scarce. My specimens are from Mr. Jackson's garden. The recent plant has a considerable odor, something between that of *Yarrow* and *Tansey*.

2. P. Uvedalia, *L.* Leaves ovate, sinuate-lobed, roughish, the lower ones broad, subpalmate, narrowed at base to a sinuate winged petiole; rays elongated, tridentate. *Beck, Bot. p.* 208.

Uvedal's Polymnia.

Root perennial. *Stem* 3 or 4 to 6 feet high, stouter than the preceding, angular and sulcate-striate, smoothish below, branched above, the branches mostly opposite and axillary, roughish-pubescent. *Leaves* 4 to 10 or 12 inches long, mostly opposite, thin, roughish-pubescent and ciliate,—the lower ones large, nearly as wide as long, palmately 3 or 5-lobed, abruptly contracted at base to a tapering winged petiole which is somewhat sinuate-lobed, and 2 to 4 inches long,—the upper ones smaller, subovate, acute or acuminate, sinuate-lobed, on shorter petioles. *Heads* of flowers something larger than in the preceding, in small loose panicles terminating the branches; *peduncles* glandular-pubescent; outer leaflets of the *involucre* large, obovate, somewhat glandular-pubescent and ciliate, foliaceous, deep green, the inner ones smaller, lance-ovate, acuminate, thin and membranous, pubescent; *rays* deep yellow, oblong, about an inch in length, 3-toothed at apex; *disk* yellow. *Akenes* roundish-obovoid, smooth.

Hab. Great Valley, near Brooke's Mill: rare. *Fl.* August. *Fr.* Sept.

Obs. This is also, rare, here,—having only been found, as yet, in the above locality,—where it was detected by Mr. Joshua Hoopes, in 1828. There are no other species known, in the U. States.

VII. Senecio Tribe. Heads *mostly heterogamous, with pistillate or neutral florets, in* 1 *or many series, in the circumference,—sometimes monoicous, rarely dioicous.* Style, *in the perfect florets, bifid, —the branches longish, linear, mostly broader towards the apex, either truncate and penicillate only at apex, or terminating in a short pubescent cone, or narrow linear appendage.* Senecionideæ. *Lessing.*

Sub-Tribe 1. Ambrosieæ. *Heads* monoicous, or heterogamous with staminate florets in the centre. *Anthers* ecaudate. *Receptacle*, in heterogamous heads, *bracteate*, the bracts glabrous. *Corolla of the pistillate florets filiform: akenes bald, not beaked, often included in the involucre.*

381. XANTHIUM. *L. Nutt. Gen.* 704.

[Greek, *Xanthos*, yellow; a color said to be produced by the plant.]

Heads homogamous, monoicous,—the pistillate ones 2-flowered, invested by an uncinately-spinose involucre. *Akenes* compressed, one in each cell of the bilocular, and finally indurated, involucre.

1. X. strumarium, *L.* Stem unarmed; leaves ovate, angulate-dentate, subcordate and strongly 3-nerved at base. *Beck, Bot. p.* 210.

Scrophulous Xanthium. *Vulgò*—Clot-weed. Cockle-bur. *Gall.*–Lampourde. *Germ.*–Die Spitzklette. *Hisp.*–Lampazo pequeño.

Root annual. *Stem* 1 to 3 feet high, angular, scabrous-pubescent, branching. *Leaves* 3 to 6 inches long, and nearly as wide as long, alternate, broad-ovate, angulate-dentate, often somewhat 3-lobed, roughish-pubescent on both sides, subcordate at base, but cuneately produced in the centre, at the union of the 3 principal nerves; *petioles* 2 to 4 inches long, striate, scabrous-pubescent. *Heads* of flowers in axillary racemose clusters,—the *staminate* ones at the summit, the *pistillate* ones at the base, of the racemes; *involucre* of the pistillate heads 2-flowered, elliptic-oblong, persistent, uncinately spinose, with 2 stouter straight spinose beaks at apex, 2-celled, each cell containing an oblong compressed *akene*.

Hab. Farm-yards; roadsides, &c. frequent. *Fl.* August—Sept. *Fr.* Octo.

Obs. This is an obnoxious weed—though not much inclined to spread; and, with a little attention, is easily to be kept in subjection. The burs are a great annoyance in the fleeces of sheep. Mr. *Nuttall* says it is indigenous in the West; but to me it has the appearance of a stranger, here.

2. X. spinosum, *L.* Stem armed with stipular ternate spines; leaves ovate-lanceolate, finally often 3-lobed. *Beck, Bot. p.* 210.

Spinose Xanthium. *Vulgò*—Thorny Clot-weed.

Root annual. *Stem* 2 to 3 or 4 feet high, terete, striate, pubescent, branched. *Leaves* 1 to 3 inches long, and 1 fourth to 3 fourths of an inch wide, alternate, ovate-lanceolate, attenuate at apex, entire, or repand-denticulate, finally often 3-lobed, or with a lobe-like tooth on each side, the upper surface pale green, sprinkled with cinereous hairs, which are dense on the midrib, the under surface clothed with a short cinereous tomentum, the base narrowed to a short pubescent *petiole*, on each side of which is a triple or 3-*forked spine*, the branches or spines about an inch long, very sharp, yellowish, or straw-colored, on a common footstalk scarcely a line in length. *Heads* of flowers axillary, solitary; *involucre* pubescent, that of the fruit uncinate-prickly.

Hab. Farm-yards; Honey-brook: rare. *Fl.* September. *Fr.* October.

Obs. This execrable foreign weed was found, about 3 years since, partially naturalized in the N. West side of this County; but it is as yet, happily, very rare. It will behove our farmers to be vigilant in arresting its progress, whilst it is yet within their control. It is becoming abundant in the vacant lots of Philadelphia, between Broad Street and the Schuylkill,—where it was introduced a few years ago, from the South. One other species, likewise a foreigner, occurs in the U. States.

382. AMBROSIA. *L. Nutt. Gen.* 703.

[A poetical name: *the food of the Gods;* but the application seems forced.]

Heads homogamous, monoicous,—the pistillate ones 1-flowered, invested by an unarmed involucre,—the staminate ones many-flowered; *receptacle* without *bracts*. *Akenes* subglobose.

1. A. trifida, *L.* Hairy and scabrous; leaves 3- or 5-lobed, serrate, the lobes oval-lanceolate, acuminate; racemes elongated, paniculate. *Beck, Bot. p.* 209.

Trifid Ambrosia.

Root annual. *Stem* 3 to 6 or 8 feet high, angular, striate, hairy and scabrous, branched. *Leaves* 4 to 6 or 8 inches long, and nearly as wide as long, mostly

opposite, palmate-lobed, hairy and scabrous, on slightly margined striate ciliate *petioles*. *Heads* of flowers small,—the *staminate* ones numerous, in long terminal paniculate racemes,—the *pistillate* ones in small clusters of 2 or 3 to 5 at the base of the racemes. *Involucre* of the *staminate* heads 1-leaved (or in a single series, with the leaflets connate), sublobed, or crenate on the margin, pilose externally, the *florets* small, tubular, whitish; involucre of the *pistillate* heads 5-lobed, persistent. *Akene* obovoid, acuminate, crowned with 6 short erect spines, or teeth, which surround the base of the acumination.

Hab. Fence-rows, and low grounds: frequent. *Fl.* August. *Fr.* October.

2. A. ELATIOR? *L.* Leaves bipinnatifid, the petioles ciliate with long hairs; racemes paniculate, terminal. *Beck, Bot. p.* 209.
A. artemisifolia. *Florul. Cestr. p.* 101. *Bart. Phil.* 2. *p.* 133. *and others?*

TALLER AMBROSIA. *Vulgò*—Bitter-weed. Rag-weed. Hog-weed.

Root annual. *Stem* 1 to 3 or 4 feet high, hairy and somewhat scabrous, usually much branched. *Leaves* 2 to 4 or 5 inches long bipinnately dissected, roughish-pubescent with short hairs, petiolate, the petioles mostly ciliate with long white hairs. *Heads* of flowers small,—the *staminate* ones numerous, in terminal slender paniculate racemes,—the *pistillate* florets in small bracteate or axillary clusters near the base of the staminate racemes; sometimes the flowers are *dioicous*,—the terminal racemes (or rather spikes), as well as the clusters beneath, being all pistillate, with the flowers in small sessile bracteate clusters. *Akenes* obovoid, acuminate, with short erect teeth around the base of the acumination.

Hab. Cultivated fields; pastures, &c. common. *Fl.* August—Sept. *Fr.* Octo.

Obs. This worthless weed is usually very abundant among the stubble, after a crop of wheat; but, if the land be good, the plant seems to give place, the next season, to the crop of clover and timothy. I have been puzzled to determine this species satisfactorily. It is evidently, I think, the A. *elatior*, of *Bigelow*, and some others,—and as clearly the A. *artemisifolia*, of *Barton*, &c.:—whilst, at the same time, it agrees pretty well with *Elliott's* A. *paniculata!* Are they all really distinct species? Five or six additional species are enumerated in the U. States.

Sub-Tribe 2. HELIANTHEÆ. *Heads*, when heterogamous, with the marginal florets in a single series, bearing ligulate corollas, the rest perfect; never dioicous, nor monoicous. *Receptacle* mostly bracteate. *Pappus* either awned, or irregular and obsolete, or crown-form, or 0. *Anthers* blackish, ecaudate.

§ 2. HELIOPSIDEÆ. *Heads* mostly heterogamous, with the marginal florets pistillate; *akenes* without coating, wings, or beak, bald, or with a crown-form pappus.

383. HELIOPSIS. *Pers. Nutt. Gen.* 682.

[Greek, *Helios*, the Sun, and *Opsis*, face, or aspect; in allusion to the flowers.]

Involucre imbricated. *Ray* florets in a single series. *Akenes* quadrangular, somewhat compressed, entirely bald, smooth, with the epigynous disk small. *Receptacle* convex, with long chaffy *bracts*.

1. H. LÆVIS, *Pers.* Leaves opposite, lance-ovate, serrate, 3-nerved, smoothish, petiolate. *Beck, Bot. p.* 204.
Buphthalmum helianthoides. *Mx. Am.* 2. *p.* 130. *Willd. Sp.* 3. *p.* 2236. *Hit. Kew.* 5. *p.* 125.

SMOOTH HELIOPSIS.

Root perennial. *Stem* 2 to 4 feet high, smooth, di- or tri-chotomously branching at summit. *Leaves* 2 or 3 to 6 inches long, and 1 to 4 inches wide, varying from ovate-lanceolate to oblong-ovate, and ovate, acute, serrate, mostly smooth beneath, and sprinkled with short hairs on the upper surface, scabrous on the margin, obtuse at base, or abruptly narrowed to a *petiole* half an inch to an inch in length. *Heads* of flowers middle-sized, on long naked striate-sulcate terminal peduncles; *involucre* pubescent, the outer leaflets foliaceous, lance-oblong, rather obtuse, pubescent-ciliate; *rays* yellow, an inch to an inch and half long, and 1 fourth to near half an inch wide. *Akenes* of the *disk* 4 angled, of the *ray* 3 angled, the outer side convex,—all truncate at apex, smooth, reddish brown. *Receptacle* convex, chaffy, the chaff twice as long as the akenes.

Hab. Banks of streams: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. Collected by Dr. E. MICHENER, in 1827. It is probably the only species in the U. States,—if not the only one of the genus;—and is liable to be mistaken by a young Botanist, for a *Helianthus*.

§ 3. RUDBECKIEÆ. *Heads* radiate, with the ray neutral, in a single series; *Akenes* without coating, or beak, bald, or with an entire crown-form pappus.

384. RUDBECKIA. *L.*

[In honor of *Olaus Rudbeck*, father and son; Swedish Botanists.]

Involucre spreading, the leaflets somewhat in a double series. *Corolla* of the *disk* funnel-form, with erect teeth, and *anthers* included,—of the *ray* entirely neutral. *Akenes* nearly square on a transverse section, with a thick callous crown-form pappus, a large epigynous disk, and a lateral areola. *Receptacle* conic, with chaffy *brac s*.

1. R. FULGIDA, *Ait.* Stem hairy and scabrous, the branches virgately elongated; leaves oblong-lanceolate, denticulate, scabrous-pubescent, narrowed at base, sessile, and subamplexicaul; disk hemispherical. *Beck, Bot. p.* 204. ICON, *Bart. Am.* 1. *tab.* 5.
R. chrysomela. *Mx. Am.* 2. *p.* 143.

SHINING RUDBECKIA.

Root perennial. *Stem* about 2 feet high, rather slender, terete, striate, rough and hairy, virgately branched, or sometimes simple. *Leaves* 1 or 2 to 4 inches long, and half an inch to an inch wide, alternate, mostly oblong-lanceolate, acute (sometimes inclining to spatulate), sparingly denticulate, hairy and scabrous on both sides, narrowed at base, sessile and subamplexicaul, or slightly cordate at the insertion. *Heads* of flowers rather small, solitary and terminal on the long nearly leafless peduncle-like branches; *involucre* foliaceous, hirsute, the leaflets lance-oblong, outer ones largest; *rays* orange-yellow, bifidly emarginate at apex, hairy beneath; *disk* very dark purple, convex, or nearly hemispherical. *Akenes* 4-angled; *pappus* a slight margin. *Receptacle* convex, chaffy, the chaff spatulate-linear, abruptly acute, smooth, the summit dark purple and ciliate on the margin.

Hab. Old fields, and borders of thickets: frequent. *Fl.* Aug. *Fr.* Sept—Octo.

2. R. HIRTA, *L.* Very hirsute; stem virgate, sparingly branched; leaves ovate-lanceolate, subserrate, hirsute, the lower ones spatulate-lanceolate; disk conical. *Beck, Bot. p.* 204.

ROUGH-HAIRED RUDBECKIA.

Root perennial? (biennial, *Bart. Am.*). *Stem* 18 inches to 3 or 4 feet high, striate, rough and hirsute, often simple. *Leaves* 2 to 3 or 4 inches long, and 3 fourths of an inch to near 2 inches wide, alternate, ovate-lanceolate, acute, more or less serrate, narrowed at base, sessile, very hairy, the lower cauline ones spatulate-lanceolate, the radical ones on long hirsute *petioles*. *Heads* of flowers middle-sized, terminal on long stoutish naked striate-sulcate peduncles (single and terminating the stem, in unbranched specimens); *involucre* foliaceous, the leaflets linear-lanceolate, pilose-ciliate, outer ones longest; *rays* yellow, obliquely bifid at apex, hairy beneath; *disk* dark purple, conical. *Akenes* oblong, 4-angled, dark purplish-brown; *pappus* a minute margin. *Receptacle* conical, chaffy, the chaff sublinear, rather acute, the summit dark purple, hairy and ciliate.

Hab. Fence-rows, and thickets: not very common. *Fl.* July—Aug. *Fr.* Sept.

Obs. This has considerable resemblance to the preceding; but is usually a stouter, rougher plant, the heads larger, and with a more prominent conical disk.

3. R. LACINIATA, *L.* Stem smooth; lower leaves pseudo-pinnate, segments lanceolate, incised-serrate, the terminal one trifid, upper leaves lance-ovate, mostly entire; pappus crenate. *Beck, Bot. p.* 205. Icon, *Bart. Am.* 1. *tab.* 16.

Laciniate Rudbeckia.

Root perennial. *Stem* 4 to 6 or 8 feet high, striate, smooth, branching. *Radical* and *lower leaves* petiolate, large (4 to 8 or 10 inches long), pseudo-pinnate, with about 5 segments, *segments* oval-lanceolate, acuminate, more or less incised-serrate, often laciniate, the terminal one trifid; *stem-leaves* often deeply 3-parted, the uppermost or *branch-leaves* lance-ovate, entire, subsessile,—all somewhat hairy, scabrous on the upper surface and along the margin. *Heads* of flowers rather large, terminal on the corymbose-paniculate branches; *involucre* foliaceous, the leaflets ovate-lanceolate, small, somewhat pilose and ciliate; *rays* yellow, 1 to 2 inches long, lance-oblong, and obovate-lanceolate, drooping, 2 or 3 toothed at apex, minutely pubescent beneath; *disk* greenish-yellow, conical. *Akenes* 4-angled, brownish; *pappus* a crenate-dentate margin. *Receptacle* conical, chaffy, the chaff cuneate-oblong, concave and keeled, obtuse, tomentose at summit.

Hab. Moist low grounds, and thickets: frequent. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. Some 10 or 12 additional species are enumerated in the U. States.

§ 4. Coreopsideæ. *Heads* heterogamous, with neutral florets in a single series in the circumference; *akenes* without coating, or beak, sometimes with a *pappus* awn-like, or chaffy, but not crown-form.

385. ACTINOMERIS. *Nutt. Gen.* 693.

[Greek, *Aktin*, a ray; and *meris*, a part; the heads being imperfectly rayed.]

Involucre spreading, or reflexed, the leaflets somewhat in a single series, foliaceous. *Rays* few, distant, elongated. *Akenes* compressed, 4-angled, 2-winged, with 2 smoothish persistent *awns* at summit. *Receptacle* small, with chaffy *bracts* embracing the margin of the akenes.

1. A. SQUARROSA, *Nutt.* Stem winged, corymbose-paniculate; leaves lanceolate, acuminate at each end, serrate, roughish-pubescent; disk subglobose, in fruit squarrose. *Beck, Bot. p.* 206.
A. alternifolia. *Bart. Phil.* 2. *p.* 132.
Verbesina Coreopsis. *Mx. Am.* 2. *p.* 134. *Pursh, Am.* 2. *p.* 565. *Lindl. Ency. p.* 728.

Coreopsis alternifolia. *Willd. Sp.* 3. *p.* 2257. *Pers. Syn.* 2. *p.* 478. *Ait. Kew.* 5. *p.* 136. *Muhl. Catal. p.* 79.

SQUARROSE ACTINOMERIS.

Root perennial. *Stem* 3 to 6 or 8 feet high, rather slender, striate, roughish-pubescent, yellowish, with green wings decurrent from the leaves, corymbose-paniculate at summit. *Leaves* 4 to 6 or 8 inches long, and 3 fourths of an inch to 2 inches wide, alternate, lanceolate, acuminate, serrate, narrowed at base to a tapering margined *petiole* which is decurrent on the stem, somewhat hairy and rough, the margin and upper surface quite scabrous, with the short hairs dilated and cinereous at base. *Heads* of flowers rather small, in a terminal leafy corymbose panicle; *peduncles* slender, striate, often densely pubescent; *involucre* loose, foliaceous, the leaflets lance-linear, or often spatulate-linear, with an inner series of lance-ovate acuminate scales; *rays* yellow, few (3 to 5 or 6), about an inch long, oblanceolate, narrowed at base, almost unguiculate; *disk* greenish-yellow, subglobose, 1 third to half an inch in diameter. *Akenes* much compressed, obovate, somewhat hairy, with each margin conspicuously winged, and a keel-like rib (sometimes 2 or 3) on each flat side, crowned at summit by 2 subulate smoothish diverging horns. *Receptacle* small, subglobose, chaffy, the chaff ovate-lanceolate, acuminate, conduplicate, embracing one margin of the akenes.

Hab. Moist grounds; along Pigeon creek: rare. *Fl.* August. *Fr.* Sept.

Obs. This was collected the present year (1836), at the above locality, on the North side of this County, by Mr. JOSEPH RINEHART. One or two additional species are enumerated in the U. States.

386. HELIANTHUS. *L. Nutt. Gen.* 689.

[Greek, *Helios*, the sun, & *Anthos*, a flower; from the resemblance of the flowers.]

Involucre foliaceous, many-leaved, the leaflets imbricated, subsquarrose. *Rays* numerous. *Akenes* subcompressed; *pappus* mostly 2 unequal chaffy scales (sometimes additional smaller ones), more or less deciduous. *Receptacle* mostly large, flat, with chaffy *bracts*.

† *Leaves opposite.*

1. H. DIVARICATUS, *L.* Stem smooth; leaves lance-ovate, tapering to the apex, rounded at base, 3-nerved, scabrous, sessile; panicle trichotomous, slender, few-flowered; involucre loose, the leaflets lanceolate, acuminate, ciliate. *Beck? Bot. p.* 202.
Also? H. truncatus. *Ell. Sk.* 2. *p.* 416. *Eat. Man. p.* 169.

DIVARICATE HELIANTHUS.

Root perennial. *Stem* 2 to 4 or 5 feet high, slender, terete, striate, smooth, or sprinkled with hairs near the summit, sometimes purple and yet with a glaucous tinge, di- or tri-chotomously branched above, often subsimple. *Leaves* 3 to 5 or 6 inches long, and 3 fourths of an inch to 2 or 2 and a half inches wide, sessile or subsessile, the base very obtuse, or rounded, and ovately dilated, acuminately tapering to the apex, more or less serrate, scabrous above, roughish-pubescent and paler beneath, hirsute on the nerves. *Heads* of flowers small, few (often 3, the central one dichotomal); *peduncles* scabrous; leaflets of the *involucre* loose, lanceolate with a slender acumination, scabrous and ciliate; *rays* 8 to 10 or 12, about 3 fourths of an inch long, yellow, with longitudinal orange-colored veins, pubescent beneath; *disk* yellow, the florets rather few, tubular, contracted at base. *Akenes* compressed, striate, smooth; *pappus* chaffy, subulate, ciliate. *Re-*

ceptacle chaffy, the chaff linear-oblong, acuminate, striate, pubescent at summit, conduplicate and embracing the florets.

Hab. Borders of woods, and thickets: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This I believe to be the H. *divaricatus* of the American Botanists, generally; but if it be the plant intended by *Elliott* and *Beck*, they have made a palpable mistake in speaking of the *petioles*. The leaves are constantly *sessile*, or on very short petioles. I received small specimens of it, from Mr. *Schweinitz*, under the name of H. *truncatus*.

2. H. frondosus, *L.* Stem smooth below; leaves lance-ovate, acuminate, serrate, thin and slightly scabrous, abruptly contracted to a petiole at base; peduncles scabrous; involucre squarrose, frondose, the leaflets undulate, ciliate; rays about 8. *Beck, Bot. p.* 202.

Frondose, or Foliaceous Helianthus.

Root perennial. *Stem* 3 to 5 feet high, rather slender, somewhat angular, striate, smooth below, with alternate axillary scabrous branches at summit. *Leaves* 3 to 6 inches long, and 1 to 3 inches wide, lance-ovate, or ovate-oblong, acuminate, rather remotely but sharply and sometimes coarsely serrate, 3-nerved, thinnish, sparingly sprinkled and roughish with short hairs on both sides, scabrous-ciliate on the margin, abruptly and cuneately tapering at base to a *petiole* half an inch to near 2 inches in length,—the upper leaves mostly alternate. *Heads* of flowers rather small; *peduncles* sulcate-angled, scabrous-pubescent, slender; leaflets of the *involucre* lance-linear, acute, ciliate, long, loose, foliaccous, sometimes undulate, reflexed, or laterally curved; *rays* about 8, palish or sulphur-yellow, oblong, about an inch in length, and 1 third of an inch wide. *Akenes* compressed, obovate-oblong, striate, smooth; *pappus* consisting of 2 opposite unequal subulate pubescent chaffy scales. *Receptacle* chaffy, the chaff resembling that of the preceding species.

Hab. Along the Brandywine: frequent. *Fl.* August—Sept. *Fr.* October.

Obs. This appears, by the description, to come very near Mr. *Elliott's* H. *tenuifolius*.

3. H. decapetalus, *L.?* Leaves ovate-lanceolate, acuminate, remotely serrate, scabrous above, softly pubescent and somewhat glaucous beneath, on short petioles; leaflets of the involucre ovate-lanceolate, acuminate, nearly equal, ciliate; rays mostly 10. *Beck? Bot. p.* 203.
H. mollis. *Florul. Cestr. p.* 92. *Not? of the Authors here cited.*

Ten-petaled Helianthus.

Root perennial. *Stem* 2 to 4 feet high, rather slender, striate, smooth below, roughish-pubescent and somewhat branched at summit. *Leaves* 3 to 6 or 8 inches long, and 3 fourths of an inch to 2 inches wide, varying from ovate to lanceolate, acute, or acuminate, 3-nerved, more or less serrate, sometimes obscurely so, green and scabrous on the upper surface, cinereous or glaucous beneath, and clothed with a short softish hoary pubescence, abruptly contracted at base to a *petiole* which is 1 third to 3 fourths of an inch in length, and more or less ciliate,—the upper leaves sometimes, but rarely, alternate. *Heads* of flowers middle-sized; *peduncles* striate-sulcate, scabrous-pubescent; leaflets of the *involucre* ovate-lanceolate, acuminate, nearly equal in length, imbricated, more or less pubescent, sometimes hirsute, conspicuously ciliate on the margin; *rays* about 10, yellow, with longitudinal orange-colored veins, an inch to an inch and half long, and 1 third to near half an inch wide, lance-oblong, slightly pubescent beneath. *Akenes* subcompressed, obovate, striate, variegated, hairy at summit; *pappus* consisting

of 2 subulate-lanceolate chaffy scales about as long as the akene, and 2 or 3 additional ones which are much shorter, ovate and acute,—all pubescent and ciliate, the small ones lacerately fringed. *Receptacle* chaffy, the chaff shorter than the disk-florets, oblong, abruptly acuminate, conduplicate, striate, pubescent at summit, and on the keel, or back.

Hab. Woodlands; borders of thickets, &c. frequent. *Fl.* Aug. *Fr.* Sept—Octo

Obs. This is the plant intended by H. *mollis*, in my Catalogue,—and I suspect it has passed under that name with some others; but it is very distinct from H. *mollis*, of *Willd.*—which is synonymous with H. *tomentosus*, *Mx.* a plant of the Illinois prairies. Our plant is in the Herbarium of the Philadelphia Academy under the name of H. *trachelifolius;* which, however, seems to be an obscure and very uncertain species. It also agrees pretty well with the description of *Elliott's* H. *spathulatus*. There is obviously a great degree of confusion and obscurity respecting the species of this genus,—which can only be removed by a good Monograph. Mr. *Nuttall*, who obligingly examined my specimens, considers this as the H. *decapetalus*, *L.* and I have accordingly adopted the name.

†† *Upper leaves alternate.*

4. H. GIGANTEUS, *L.* Leaves lanceolate, acuminate, subserrate, obsoletely 3-nerved, scabrous, narrowed and ciliate at base, subsessile; leaflets of the involucre linear-lanceolate, attenuate at apex, ciliate. *Beck, Bot. p.* 202.

GIGANTIC HELIANTHUS. *Vulgò*—Wild Sun-flower.

Root perennial. *Stem* 5 to 8 feet high, rather stout, terete, striate, more or less hirsute and scabrous, sometimes smoothish below, corymbose-paniculate at summit. *Leaves* 2 or 3 to 5 or 6 inches long, and half an inch to an inch wide, lanceolate, acuminate at each end, more or less serrate, thickish and subcoriaceous, very scabrous above, roughish and pilose beneath, narrowed almost to a petiole at base, the narrow portion ciliate,—the lower leaves generally opposite, the upper ones alternate. *Heads* of flowers rather large, in a loose terminal corymbose panicle; *peduncles* roughish-pubescent, leaflets of the *involucre* linear-lanceolate, long, and attenuated at apex, hirsute and ciliate; *rays* numerous (12 to 20), yellow, with longitudinal orange-colored veins, about an inch in length, lance-oblong; florets of the *disk* very numerous, greenish-yellow. *Akenes* subcompressed, cuneate-oblong, somewhat 4-angled, finely striate, smooth, dark brown; *pappus* consisting of 2 lance-subulate chaffy scales, finely lacerate on the margin, rather shorter than the akene (longer, *Ell.*). *Receptacle* chaffy, the chaff shorter than the disk-florets, oblong, conduplicate, acute, with a short tooth on each side near the apex, striate, pubescent at summit and on the back.

Hab. Borders of thickets, &c. frequent. *Fl.* August—Sept. *Fr.* October.

5. H. TUBEROSUS, L. *Leaves ovate, acuminate, 3-nerved, scabrous, the lower ones subcordate; petioles ciliate.* Beck, Bot. p. 203.

TUBEROUS HELIANTHUS. Vulgò—*Jerusalem Artichoke.*

Gallicè—*Topinambour.* Germ.—*Die Erdartischoke.* Hisp.— *Cotufa.*

Root *perennial, tuberous.* Stem 4 *to* 6 *or* 8 *feet high, stout, terete, striate, hirsute and scabrous, branching.* Leaves 4 *to* 6 *or* 8 *inches long, and* 2 *to* 3 *or* 4 *inches wide, ovate, acuminate, serrate-dentate, very scabrous on the upper surface, pubescent and roughish beneath, abruptly contracted at base to a narrow cuneately-tapering margined ciliate* petiole 1 *to* 2 *or* 3 *inches in length,—the lower leaves sub-cordate at base, opposite* (*rarely ternate*), *the upper ones alternate.* Heads *of*

flowers rather large, terminal; peduncles *stout, angular, hirsutely pubescent; leaflets of the* involucre *lanceolate, hispid and ciliate;* rays *numerous, yellow; florets of the* disk *numerous, greenish-yellow.* Akenes *subcompressed, cuneate-oblong, somewhat 4-angled, smooth;* pappus 2 *subulate chaffy scales.* Receptacle *chaffy, the chaff oblong, acuminate, with an acute tooth on each side, near the apex, pubescent at summit.*

Hab. *Gardens, and lots: frequent.* Fl. *August—Sept.* Fr. *October.*

Obs. *This is often cultivated for the firm fleshy* tubers, *at the root,—which are pickled and used as a condiment. The plant is apt to become troublesome in gardens. The* H. annuus, *or* common Sun-flower, *is very common about our gardens;—but it is neither naturalized, nor cultivated for any useful purpose, here,—though the* seeds *are said to afford a valuable oil. Some* 18 *or* 20 *additional species have been enumerated in the U. States,—and there are probably some, in the South and West, which are not yet described. Indeed the whole of our North American species require a careful revision, by some competent hand.*

§ 5. BIDENTIDEÆ. *Heads* either heterogamous, with neutral florets in a single series in the circumference, or homogamous, and then the akenes awned; *akenes* without coating, beaked, never with a crown-form pappus.

387. BIDENS. *L. Nutt. Gen.* 691.

[Latin, *bi-dens*, having two teeth; alluding to the awns of the akenes.]

Involucre many-leaved, the leaflets in a double series, unequal, the outer ones spreading. *Rays* often wanting. *Akenes* obcompressed, not winged; *pappus* 2 to 5 retrorsely hispid persistent *awns*. *Receptacle* mostly flat, with chaffy *bracts*.

1. B. CHRYSANTHEMOIDES, *Mx.* Leaves oblong-lanceolate, tapering at each end, serrate, sessile, and connate at base; heads radiate, somewhat nodding; rays 2 or 3 times as long as the involucre. *Beck, Bot. p.* 207.

CHRYSANTHEMUM-LIKE BIDENS. *Vulgò*— Beggar-ticks.

Root annual? *Stem* 1 to 2 feet high, erect, or declining, often angular, striate, smooth, branching, the branches opposite and axillary. *Leaves* 3 to 6 inches long, and half an inch to an inch and half wide, opposite, lanceolate, acuminate, dentate-serrate, smooth, somewhat scabrous on the margin, narrowed at base, sessile and connate. *Heads* of flowers rather large, solitary, terminating the branches, erect, or often somewhat nodding; *involucre* double,—the outer leaflets about 8, foliaceous, spreading, linear-lanceolate, smooth, ciliate-serrulate on the margin, unequal, the largest sometimes nearly as long as the rays,—the inner leaflets membranaceous, elliptic, or ovate-oblong, striate, yellow on the margin, nearly equal, about as long as the florets of the disk; *rays* bright yellow, numerous, lance-oblong, about twice as long as the inner leaflets of the involucre; florets of the *disk* funnel-form, greenish-yellow. *Akenes* compressed, oblong-cuneate, retrorsely aculeate on the margins, striate-ribbed, and somewhat keeled on the flatted sides; *pappus* usually consisting of 4 (2, *Mx.*) retrorsely hispid *awns* about as long as the disk-florets. *Receptacle* slightly convex, chaffy, the chaff spatulate-linear, scarious, with 3 central longitudinal striæ, yellowish at summit, rather obtuse, remotely denticulate on the margin.

Hab. Low grounds; along swampy rivulets: frequent. *Fl.* Aug—Sept. *Fr.* Octo.

2. B. PETIOLATA, *Nutt.* Leaves lanceolate, acuminate, serrate, narrowed at base to a margined petiole; heads mostly without rays, rather erect; outer series of the involucre bract-like, 3 times as long as the head.

B. cernua. *Florul. Cestr. p.* 92. *Not of L. nor? others.*

PETIOLATE BIDENS.

Root annual? *Stem* 1 to 2 or 3 feet high, erect, striate, smooth, often purple, branched. *Leaves* 2 to 5 or 6 inches long, and 1 third of an inch to an inch or inch and half wide, opposite, lanceolate, serrate, with a long entire acumination, smooth, somewhat scabrous on the margin, cuneately tapering at base to a narrow-margined *petiole* half an inch to near 2 inches in length, the petioles sub-connate at base. *Heads* of flowers middle-sized, rather erect; *involucre* double,—the outer leaflets about 5, foliaceous, lance-oblong, rather obtuse, slightly mucronate, smooth, subciliate, 2, 3 or 4 times as long as the head,—the inner leaflets scarcely as long as the head, oblong-ovate, acute, membranaceous, striate, brown, with a scarious yellowish margin; *rays* generally wanting; florets of the *disk* greenish-yellow. *Akenes* compressed, oblong- or obovate-cuneate, striate, retrorsely hispid on the margins; *pappus* consisting of 3 or 4 retrorsely hispid *awns*, the two middle ones shorter, and of these the inner one often entirely wanting. *Receptacle* chaffy, the chaff lance-oblong, nearly as long as the florets.

Hab. Low, swampy grounds; ditches, &c. frequent. *Fl.* Sept. *Fr.* Octo.

Obs. This was hastily and erroneously inserted in my Catalogue, as B. *cernua*. In fact, I have never yet met with an American specimen which agreed exactly with the B. *cernua*, of Europe. Mr. *Nuttall*, who examined our plant, calls it B. *petiolata;* and I believe he has somewhere published it by that name. I must confess, however, that with the exception of the "ternate" leaves, Mr. *Elliott's* description of B. *connata* comes very near it.

3. B. FRONDOSA, *L.* Lower leaves quinate-pinnate, upper ones ternate, lanceolate, serrate; heads without rays; outer series of the involucre frondose, much longer than the head, the leaflets ciliate at base. *Beck, Bot. p.* 207.

FRONDOSE, OR FOLIACEOUS BIDENS. *Vulgò*—Bur Marygold.

Root annual. *Stem* 2 to 4 or 5 feet high, angular, striate, sprinkled with a few hairs, often dark purple, branched. *Leaves* opposite, pseudo-pinnate, the lower ones quinate, the upper ones ternate; the *leaflets* 2 to 4 or 5 inches long, and half an inch to an inch wide, lanceolate, acute, serrate, slightly ciliate, and pilose beneath, abruptly narrowed at base to a short margined ciliate *petiole*,—the *common petiole* 1 to 3 inches long, striate, somewhat margined and pubescent-ciliate. *Heads* of flowers rather small, on long slender naked axillary branches, or peduncles; *involucre* double,—the outer leaflets 8 to 10 or 12, foliaceous, unequal, lanceolate, acute, sparingly pilose, narrowed and conspicuously ciliate towards the base, 2 or 3 to 5 or 6 times as long as the head,—the inner leaflets scarcely as long as the head, ovate-lanceolate, acute, striate, brown, with a scarious margin; *rays* none; florets of the *disk* yellowish. *Akenes* compressed, obovate-cuneate, pubescent and ciliate with erect hairs; *pappus* consisting of 2 retrorsely hispid *awns* longer than the florets. *Receptacle* chaffy, the chaff linear-lanceolate, about as long as the akenes.

Hab. Gardens; fence-rows, &c. common. *Fl.* August—Sept. *Fr.* October.

4. B. bipinnata, *L.* Leaves bipinnate; heads subradiate; outer series of the involucre scarcely as long as the inner. *Beck, Bot. p.* 207.

Bipinnate Bidens. *Vulgò*—Spanish Needles.

Root annual. *Stem* 2 to 4 feet high, quadrangular, striate, smooth, branched. *Leaves* 2 to 4 or 5 inches long, and an inch and half to 3 inches wide, smoothish, somewhat deltoid-ovate in the outline, bipinnately dissected, the segments irregularly lance-ovate, acute or obtuse, slightly mucronate, mostly cuneate and attenuate at base, the *common petiole* 1 to 3 or 4 inches long, striate, smooth. *Heads* of flowers small, oblong, on long naked angular-sulcate terminal and axillary peduncles; *involucre* double, the leaflets lance-linear, connate at base,—the outer ones about 8, rather shorter and narrower than the inner ones,—inner ones scarcely as long as the head, brown, with a narrow scarious margin, and minutely pubescent-ciliate at summit; *rays* about 3, obovate, small, yellow, with dark veins; florets of the *disk* yellow. *Akenes* about 3 fourths of an inch long, sublinear, angular and sulcate, somewhat scabrous with short erect hairs, and often marked with rugose tawny spots; *pappus* consisting of 3 or 4 retrorsely hispid *awns* about as long as the florets. *Receptacle* chaffy, the chaff lance-linear, shorter than the akenes.

Hab. Gardens, and cultivated lots: common. *Fl.* August—Sept. *Fr.* Octo.

Obs. All the foregoing species are noted for the mature akenes adhering, by their barbed awns, to the clothing of those who go amongst them in autumn. The two first mentioned abound in our swampy low grounds; and the two latter are troublesome weeds about gardens, and cultivated lots. Two or three additional species are enumerated in the U. States.

Sub-Tribe 5. Helenieæ. *Heads* never dioicous,—when heterogamous, with pistillate or neutral florets in a single series in the circumference bearing ligulate corollas, the rest perfect. *Anthers* ecaudate. *Akenes* not beaked; *pappus* of many chaffy scales.

388. HELENIUM. *L. Nutt. Gen.* 684.

[Said to have been derived from *Helen*, the wife of Menelaus.]

Involucre many-leaved, the leaflets in a single series, connate at base. *Rays* numerous, pistillate, cuneate, mostly 3-lobed at apex. *Akenes* striate-pilose; *pappus* chaffy, acuminate, awned. *Receptacle* convex, with chaffy *bracts* on the margin only.

1. H. autumnale, *L.* Stem angular, sub-alate; leaves lanceolate, serrate, decurrent; disk globose; rays spreading, or reflexed. *Beck, Bot. p.* 201. Icon, *Bart. Am.* 1. *tab.* 26.

Autumnal Helenium. *Vulgò*—False Sun-flower. Sneeze-weed.

Whole plant of a palish cinereous-green. *Root* perennial. *Stem* 2 to 5 feet high, corymbose-paniculate, angular, striate, minutely pubescent, yellowish, with the angles green and slightly winged by the decurrence of the leaves; *branches* angular and leafy. *Leaves* alternate, 2 to 4 inches long, and half an inch to an inch wide, lanceolate, acuminate, irregularly serrate, narrowed at base, sessile, minutely pubescent, and punctiulate under a lens. *Heads* of flowers middle-sized (an inch to an inch and half in diameter, including the rays), numerous; *peduncles* 1 to 2 inches long, rather slender, thickened near the involucre, sulcate-striate, pubescent, terminal and axillary on the corymbose-paniculate branches.

the terminal ones often in pairs; *involucre* many-parted, or the leaflets united at base, subulate-lanceolate, pubescent, reflexed; *rays* yellow, strongly veined, cuneate, attenuate at base, 3- 4- or 5-cleft at apex, mostly drooping; *disk* subglobose, 1 third to 2 thirds of an inch in diameter, greenish-yellow. *Akenes* obconic, 5-angled or ribbed, appressed-pilose on the ribs, crowned with a *pappus* of 5 chaffy ovate-lanceolate acuminate or awned scales. *Receptacle* hemispherical, naked, except a few lance-linear chaffy scales, between the ray-florets, about as long as the florets of the disk.

Hab. Margins of streams; Brandywine, &c. frequent. *Fl.* August. *Fr.* Octo.

Obs. The plant is bitter and aromatic. The powdered receptacle and involucre are said to possess active errhine properties. One or two additional species are enumerated in the U. States.

Sub-Tribe 6. CHRYSANTHEMEÆ. *Heads* heterogamous, with pistillate or neutral florets in a single series in the circumference, of which some at least are ligulate. *Anthers* ecaudate. *Akenes* not beaked, mostly angular and ribbed; *pappus* 0, or crown-form, entire, or rarely of minute chaffy semilanceolate equal scales.

§ 1. ANTHEMIDEÆ—the *receptacle* with chaffy *bracts*.

389. ANTHEMIS. *L. Nutt. Gen.* 679.

[Greek, *Anthemon*, a flower; from the great number it produces.]

Involucre campanulate, the leaflets nearly equal. *Rays* rather numerous, oblong, mostly pistillate. *Akenes* angular, smoothish, the areola terminal; *pappus* obsolete, or crown-form, callous, thick and entire. *Receptacle* convex, large, with chaffy or setaceous *bracts*.

1. A. NOBILIS, L. *Stem prostrate, branching from the base, villose; leaves decompound-pinnatifid, subvillose, segments linear-subulate; chaff of the receptacle scarious, lanceolate, scarcely as long as the florets.* Willd. Sp. 3. p. 2180.

NOBLE ANTHEMIS. Vulgò—*Chamomile. Garden Chamomile.*

Gall.–*Camomille romaine.* Germ.–*Die Kamille.* Hisp.–*Manzanilla.*

Root *perennial, ligneous.* Stem 4 *to* 8 *or* 10 *inches long, prostrate, or decumbent, branching, villose, leafy.* Leaves 1 *to* 2 *inches long, pilose, bipinnately dissected, the segments filiform, acute.* Heads *of flowers terminal, on elongated leafless striate pubescent peduncles;* involucre *pilose, the leaflets oblong, scarious on the margin;* rays *white, elliptic-oblong, finally reflexed;* disk *yellow, convex, at length conical.* Akenes *with a nearly obsolete crown-form pappus.* Receptacle *conical, chaffy, the* chaff *lanceolate and lance-oblong, scarious, awnless, shorter than the florets.*

Hab. *Gardens: common.* Fl. *July.* Fr. *August—September.*

Obs. *An aromatic bitter; generally cultivated, and deservedly popular as a tonic. The heads of flowers produced in this country are rarely so large and fine as those imported.*

2. A. ARVENSIS, *L.* Stem erect, pilose; leaves bipinnatifid, hairy and canescent, the segments lance-linear; akenes crowned with a narrow margin; chaff of the receptacle lanceolate, cuspidate, keeled, rather longer than the florets. *Beck, Bot. p.* 212.

Field Anthemis. *Vulgò*—Wild Chamomile.

Plant nearly inodorous. *Root* annual. *Stem* 9 to 15 inches high, mostly erect, striate, pilose, branched. *Leaves* clothed with cinereous hairs, bipinnately dissected, the segments flat, lance-linear, acute. *Heads* of flowers terminal on elongated leafless tomentose peduncles; *involucre* sublanuginous, the leaflets lance-oblong, with the margin and apex scarious, shining, and often rather tawny; *rays* white, spreading; *disk* yellow, convex. *Akenes* obconic, angular, smoothish, crowned with a thick narrow margin. *Receptacle* conic, chaffy, the chaff membranaceous, lanceolate, keeled, with a subulate acumination, as long or longer (sometimes shorter?) than the florets.

Hab. Cultivated grounds: frequent. *Fl.* June. *Fr.* August.

Obs. A foreigner, gradually becoming naturalized.

3. A. Cotula, *L.* Stem erect, smoothish; leaves bipinnatifid, the segments subulate-linear; ray-florets neuter; akenes bald, ribbed, mostly tuberculate; chaff of the receptacle bristle-form, shorter than the florets. *Beck, Bot. p.* 212.
Maruta fœtida. *Less. Syn. p.* 249.

Vulgò—Stinking Chamomile. Dog's Fennel. Richardson's Pink.

Plant strongly fœtid. *Root* annual. *Stem* 6 to 12 inches high, mostly erect, striate, somewhat pilose, leafy, much branched. *Leaves* more or less pilose, green, bipinnately dissected, the segments flat, very narrow, linear, acute. *Head* of flowers terminal on elongated slender leafless striate pubescent peduncles; *involucre* pilose, the leaflets lance-oblong, with a green keel, scarious on the margin; *rays* white, neuter, spreading, often drooping or reflexed; *disk* yellow, prominently convex or subcylindric. *Akenes* oblong, somewhat obconic, striate-ribbed, mostly tuberculate, with a minute epigynous disk, but entirely bald, or destitute of any crown-like margin at summit. *Receptacle* oblong-conic, prominent, chaffy except at base, the chaff bristle-form, or subulate, shorter than the florets.

Hab. Farm-yards, lanes, &c. frequent. *Fl.* June—Sept. *Fr.* August—Octo.

Obs. A disagreeable little foreign weed, now extensively naturalized. It is readily distinguished from the preceding by its fœtid odor;—as well as by its botanical characters,—on which it has been generically separated from Anthemis, by *Cassini*, *Lessing*, &c. There are no native species in the U. States.

390. ACHILLEA. *L. Nutt. Gen.* 680.

[Named after *Achilles*, a disciple of Chiron; who first used the plant.]

Involucre cylindric-ovoid, the leaflets imbricated, unequal. *Rays* few, short and roundish-obovate, pistillate; tube of the *disk-florets* compressed, margined. *Akenes* subcompressed, smooth, bald, the areola terminal. *Receptacle* small, flat, with chaffy *bracts*.

1. A. millefolium, *L.* Stem sulcate-striate, pilose; leaves bipinnatifid, the segments linear, incised-serrate, acute; corymb compound. *Beck, Bot. p.* 212.

Thousand-leaf Achillea. *Vulgò*—Yarrow. Milfoil.

Gallicè—La Millefeuille. *Germ.*—Die Schafgarbe. *Hisp.*—Milenrama.

Root perennial. *Stem* 2 to 3 feet high, angular and sulcate-striate, hairy and somewhat lanuginous, leafy, mostly simple, corymbose at summit. *Leaves* 2 or 3 to 6 inches long (the radical ones often still longer) and 3 fourths of an inch to 2

inches wide, subsessile, more or less pilose, bipinnately and finely dissected, the segments very numerous, linear, mucronate, incised. *Heads* of flowers small, numerous, in a dense terminal compound fastigiate corymb; *involucre* subovoid, pilose, the leaflets lance-oblong, unequal, imbricated, with a prominent keel or midrib; *rays* about 5, white, or often tinged with purple, roundish-obovate, crenate-dentate at apex; *disk-florets* few, the tube sprinkled with resinous particles. *Akenes* compressed, slightly margined near the summit, bald, smooth. *Receptacle* flat, chaffy, the chaff lance-oblong.

Hab. Pastures, fence-rows, &c. common. *Fl.* June—Sept. *Fr.* August—Octo.

Obs. An aromatic bitter and astringent; and popular as a tonic. This foreigner is now extensively naturalized. The Europeans seem to consider it as a plant of some value in their pastures: But it is here universally, I believe, regarded as a mere weed.

§ 2. CHRYSANTHEMEÆ—the *receptacle* without *bracts*.

391. CHRYSANTHEMUM. *L.* *Nutt. Gen.* 671.

[Greek, *Chrysos*, gold, and *Anthemon*, a flower; from the yellow disk.]

Involucre campanulate, the leaflets imbricated, the inner ones with dilated scarious margins. *Rays* numerous, long, ligulate, pistillate; tube of the *disk-florets* fleshy, compressed, and somewhat margined. *Akenes* subterete, bald, with a large epigynous disk. *Receptacle* rather large, convex, naked.

1. C. LEUCANTHEMUM, *L.* Stem erect, subramose; leaves oblong, crenately incised, subamplexicaul, the lower ones cuneate-spatulate, petiolate. *Beck, Bot. p.* 212.

WHITE-FLOWERED CHRYSANTHEMUM. *Vulgò*—Daisy. Ox-eye Daisy. *Gall.* L'œil de Bœuf. *Ger.* Die Wucherblume. *Hisp.* Margarita mayor.

Root perennial. *Stem* 1 to near 2 feet high, erect, or subdecumbent at base, angular and striate, somewhat pilose, purplish on the angles, simple, or sparingly branched. *Leaves* 3 fourths of an inch to an inch and half long, and 1 fourth to 2 thirds of an inch wide, alternate, smooth, cauline ones oblong, mostly obtuse, incised, often pinnatifid near the base, sessile and subamplexicaul, the lower ones cuneate-spatulate, attenuate at base, radical ones orbicular-spatulate, crenately incised, and dentate, petiolate. *Heads* of flowers large (1 to 2 inches in diameter, including the rays), solitary, terminal; *involucre* smooth, dilated-campanulate, or depressed-hemispherical, the leaflets imbricated, lanceolate, the apex of the inner ones with a dilated scarious margin; *rays* white, elliptic-oblong, narrowed at base, spreading, in length about equal to the diameter of the disk; *disk* yellow, slightly convex. *Akenes* subterete, ribbed, bald, smooth, dark purple, or nearly black. *Receptacle* slightly convex, naked, dotted.

Hab. Fields, and meadows: frequent. *Fl.* June—August. *Fr.* July—Sept.

Obs. This vile foreign weed, from the culpable negligence of the farmers, has become a serious nuisance in many neighborhoods; and threatens to overrun the whole country. In Europe, the C. *segetum* seems to be considered a greater evil. but that has not yet been introduced here. There are no native species known in the U. States,—though *Pursh* mentions one on the N. W. coast,—and Prof. *Hooker* enumerates 2 or 3 in British America.

Sub-Tribe 7. Artemisieæ. *Heads* never dioicous, the marginal florets in one or several series, pistillate, bearing tubular or sometimes obsoletely ligulate corollas. *Pappus* 0, or crown-form, or consisting of very short paleæ, or hairs. *Anthers* ecaudate.

392. ARTEMISIA. *L. Nutt. Gen.* 653.

[Said to be named from *Artemis;* the Diana of the Greeks.]

Heads small, numerous, often heterogamous, with the florets of the disk perfect,—those of the circumference in a single series, pistillate, not ligulate. *Involucre* subglobose, the leaflets closely imbricated, dry, scarious on the margin. *Akenes* obovoid, bald, with a minute epigynous disk. *Receptacle* naked, or pilose.

1. A. Abrotanum, L. *Stem terete, rigid, subsimple; leaves bipinnatifid, segments of the upper ones capillaceous; heads roundish-ovoid; receptacle naked.* Willd. Sp. 3. p. 1818.

Vulgò—*Southern-wood. Old Man.*

Gallicè—*Aurone.* Germanicè—*Die Stabwurtz.* Hisp.—*Abrótano.*

Root *perennial.* Stems 2 *to* 3 *feet high, subsimple, numerous from the root, suffruticose, upright, striate-sulcate, minutely pubcrulent, leafy.* Leaves *alternate petiolate, puberulent, bipinnately dissected, the segments linear, capillaceous.* Heads *of flowers subglobose, small, numerous, in axillary racemes, forming a long slender terminal leafy racemose panicle;* involucre *pubescent, the leaflets elliptic-oblong, obtuse, closely imbricated, connivent, with green keel and scarious margins;* florets *inconspicuous.* Akenes *obovoid, smooth, bald.* Receptacle *small, naked.*

Hab. *Gardens: frequent.* Fl. *August.* Fr. *Sept—October.*

Obs. *Generally kept in gardens, as a medicinal plant,—being somewhat bitter and aromatic.*

2. A. Absinthium, L. *Stem angular-sulcate, paniculate at summit; leaves bipinnatifid, silky-pubescent and hoary, the segments elliptic-oblong; heads hemispherical, nodding; receptacle pilose.* Willd. Sp. 3. p. 1844.

Vulgò—*Worm-wood.*

Gallicè—*L'Absinthe.* Germanicè—*Der Wermuth.* Hisp—*Axenjo.*

Plant hoary with a short silky and rather dense pubescence. Root *perennial.* Stems 2 *to* 4 *feet high, numerous from the root, angular, and striate-sulcate, paniculately branching at summit.* Leaves *alternate, petiolate, multifid, irregularly bipinnatifid, the principal segments often trifid, cuneate at base, the subdivisions elliptic-oblong, obtuse, entire.* Heads *of flowers hemispherical, rather larger than the preceding, numerous, in leafy paniculate racemes;* bracts *or* floral leaves *mostly undivided;* involucre *pubescent, the outer leaflets linear-oblong, the inner ones roundish or elliptic-obovate, scarious on the margin;* florets *yellowish.* Akenes *obconic-oblong, smooth, bald.* Receptacle *very hairy.*

Hab. *Gardens: common.* Fl. *August.* Fr. *Sept—October.*

Obs. *This plant, proverbial for its bitterness, is kept in almost every garden; and is valuable for its medical properties, as a tonic, vermifuge, &c. The* A. vulgaris, *or* common Mugwort,—*with pinnatifid leaves, green above, and whitish-tomentose beneath,—is occasionally to be found about old gardens; but can hardly, in strictness, be considered either as naturalized, or cultivated for any useful pur-*

pose. It is certainly not a native, here; although usually given as a North American plant, along with some 12 *or* 14 *other species. Prof.* Hooker *enumerates* 22 *species in British America.*

393. TANACETUM. *L. Nutt. Gen.* 652.

[Corrupted from *Athanasia*, Gr. *a*, not, & *Thanatos*, death; from its durable flowers.]

Heads rather large, homogamous, or heterogamous with pistillate florets in a single series in the circumference, the rest perfect. *Involucre* campanulate, imbricated. *Rays* trifid, often obsolete, or wanting. *Akenes* angular, with a large epigynous disk; *pappus* crown-form, minute, sometimes obsolete, often more conspicuous on the outer side. *Receptacle* more or less convex, naked.

1. T. VULGARE, *L.* Leaves smoothish, pseudo-pinnate, segments lance-oblong, pinnatifid and incised-serrate; heads heterogamous, corymbose. *Beck, Bot. p.* 211.

COMMON TANACETUM. *Vulgò*—Tansey.

Gallicè—Tanaisie. *Germanicè*—Der Rainfarn. *Hisp.*—Tanaceto.

Root perennial. *Stem* 2 to 4 feet high, terete, ribbed and striate, smoothish, somewhat branched above. *Leaves* alternate, smoothish, punctate, 2 or 3 to 6 or 8 inches long, interruptedly pseudo-pinnate, the segments pinnatifid, unequally and sharply incised-serrate. *Heads* of flowers depressed-hemispherical, in dense terminal fastigiate corymbs; *involucre* smoothish, the outer leaflets lanceolate, acuminate, the inner ones oblong, obtuse, the margin and apex scarious; *florets* deep yellow, sprinkled with resinous particles, very numerous and crowded in the disk, the marginal ones pistillate, trifid, obsoletely radiate. *Akenes* 5-angled, smooth; *pappus* crown-form, of minute scales. *Receptacle* naked, nearly flat.

Hab. About gardens, fence-rows, &c. frequent. *Fl.* July—August. *Fr.* Sept.

Obs. This foreigner is becoming gradually naturalized. The plant is bitter and aromatic,—and the infusion a very popular domestic medicine. Mr. *Nuttall* mentions one native species in the U. States.

Sub-Tribe 8. GNAPHALIEÆ. *Heads* many-flowered, or often few-flowered, rarely radiate, sometimes dioicous. *Corolla* of the pistillate or neutral florets filiform, rarely ligulate. *Anthers* caudate. *Pappus* hair-like, or setaceous, often long, rarely crown-form, sometimes none.

394. GNAPHALIUM. *L. Nutt. Gen.* 656.

[Greek, *Gnaphalon*, soft down, or wool; with which the plants are clothed.]

Heads mostly many-flowered, the pistillate florets numerous, in several series in the circumference; sometimes dioicous. *Involucre* imbricated, the leaflets scarious, often colored. *Florets* tubular, filiform. *Akenes* not beaked; *pappus* in a single series, capillary, or clavate. *Receptacle* mostly flat, naked.

† *Heads heterogamous: Pappus all capillary.*

1. G. PURPUREUM, *L.* Stem erect, simple; leaves oblong-spatulate, tomentose beneath; heads of flowers sessile, clustered, axillary and terminal. *Beck, Bot. p.* 179.

PURPLE GNAPHALIUM.

Root perennial. *Stem* 6 to 12 or 15 inches high, slender, simple, clothed with a white tomentum. *Leaves* 3 fourths of an inch to an inch and half long, and 1 fourth to 1 third of an inch wide, alternate, oblanceolate, or oblong-spatulate, rather obtuse, slightly mucronate, entire, tapering to the base, sessile, the upper surface green, somewhat lanuginous, the under surface densely clothed with a white tomentum. *Heads* of flowers small, in compact axillary and terminal sessile clusters; *involucre* somewhat ventricose, lanuginous at base, the leaflets oblong-lanceolate, acute, smooth, of a dingy purplish tawny, or leaden color; *florets* very slender, white, with a minute purplish limb. *Akenes* obconic-oblong, small, minutely scabrous; *pappus* capillary, scabrous, white. *Receptacle* flat, roughish-dotted.

Hab. Dry, open woodlands; clearings, &c. frequent. *Fl.* July-Aug. *Fr.* Aug-Sept.

2. G. ULIGINOSUM, *L.* Stem diffusely branched, lanuginous; leaves linear-oblanceolate, tomentose on both sides; heads of flowers in dense terminal clusters, shorter than the leaves at their base. *Beck, Bot. p.* 178.
Filago uliginosa. *Lindl. Ency. p.* 744.

MIRY, OR MARSH GNAPHALIUM. *Vulgò*—Marsh Cud-weed.

Root annual. *Stem* 4 to 6 or 8 inches high, bushy, or much branched from the base, leafy, very woolly. *Leaves* about an inch long, and 1 or 2 lines wide, lance-linear and linear-oblanceolate, acute, slightly mucronate, entire, tapering gradually to the base, sessile. *Heads* of flowers small, in dense clusters in the bosom of the leaves at the summit of the branches; *involucre* very woolly at base, the leaflets lanceolate, acute, smooth and shining, yellowish-tawny. *Akenes* obovoid-oblong, smooth; *pappus* capillary. *Receptacle* flat, minutely scrobiculate, or irregularly pitted.

Hab. Low grounds; exsiccated ponds, &c. frequent. *Fl.* July-Aug. *Fr.* Aug-Sept.

3. G. GERMANICUM, *Sm.* Stem mostly dichotomous, or proliferously branched above; leaves linear-lanceolate, acute, tomentose; heads few-flowered, in subglobose clusters, terminal and dichotomal; leaflets of the involucre cuspidate. *Beck, Bot. p.* 178.
Filago germanica. *Pers. Syn. 2. p.* 422. *Lindl. Ency. p.* 742.
Gifola. *Less. Syn. p.* 333.

GERMAN GNAPHALIUM. *Vulgò*—Common Cud-weed.

Root annual. *Stem* 6 to 9 inches high, lanuginous, mostly dichotomous above, or with 2 or more proliferous and often divaricate branches at summit, sometimes nearly simple, and occasionally with numerous principal branches from near the root. *Leaves* alternate, numerous, half an inch to 3 quarters in length, and 1 to 2 or 4 lines wide, lance-linear, or oblong, acute, entire, erect, sessile and semi-amplexicaul, woolly on both sides. *Heads* of flowers small, in dense roundish-ovoid capitate clusters, which are solitary, leafy at base, terminal and dichotomal; *involucre* woolly at base, the leaflets lanceolate, with a subulate acumination, smooth, scarious, pale tawny, or straw-colored, with a green midrib or keel; *florets* very slender. *Akenes* oblong, minutely scabrous; *pappus* capillary. *Receptacle* small, convex, tuberculate.

Hab. Dry hills; old fields, roadsides, &c. not very common. *Fl.* July. *Fr.* Aug.

Obs. This species is pretty common on the northern side of the County; but rather scarce in the central and southern portions.

4. G. POLYCEPHALUM, *Mx.* Stem paniculate; leaves linear-oblanceolate, acute, smoothish above, tomentose beneath; heads of flowers in terminal corymbose clusters. *Beck, Bot. p.* 178.
G. obtusifolium. *Willd. Sp.* 3. *p.* 1880. *Ait. Kew.* 5. *p.* 16.
Antennaria obtusifolia. *Lindl. Ency. p.* 700.

MANY-HEADED GNAPHALIUM. *Vulgò*—Life everlasting.

Root annual. *Stem* 1 to 2 feet high, hoary-tomentose, paniculately branched near the summit. *Leaves* 1 to 3 inches long, and 1 or 2 lines to near half an inch wide, attenuate, linear-oblanceolate, acute, entire, somewhat undulate on the margin, narrowed towards the base, sessile, nearly smooth and green on the upper surface, densely tomentose and whitish beneath. *Heads* of flowers rather small, very numerous, oblong-ovoid, whitish or ochroleucous, aggregated in dense terminal corymbose clusters, forming altogether a large corymbose panicle, very fragrant; *involucre* longer than the disk, lanuginous at base, the leaflets ovate and ovate-oblong, rather obtuse, scarious, smooth, unequal, imbricated, whitish, the inner ones with a green midrib near the base; *florets* slender, yellowish. *Akenes* oblong, smooth; *pappus* capillary, scabrous, somewhat tawny. *Receptacle* flat, punctate.

Hab. Old fields, and pastures: common. *Fl.* August—Sept. *Fr.* Octo.

Obs. The infusion of this plant is a popular remedy in Dysentery; but scarcely to be relied on, in severe cases. Dr. *Barton*, in his note on G. *margaritaceum* (*Flor. Phil.* 2. *p.* 104.), must certainly have reference to this species.

†† *Heads dioicous: pappus of the staminate heads clavate.*

5. G. MARGARITACEUM, *L.* Stem branched at summit; leaves linear-lanceolate, acuminate, lanuginous above, tomentose beneath; corymb fastigiate; heads pedunculate. *Beck, Bot. p.* 179.
Antennaria margaritacea. *Lindl. Ency. p.* 700. *Lees. Syn. p.* 354.
PEARLY GNAPHALIUM.

Root perennial. *Stem* 1 to near 2 feet high, hoary-tomentose, subsimple, corymbose at summit. *Leaves* 2 to 4 inches long, and 1 or 2 to 4 lines wide, alternate, tapering at apex to an acute point, entire, narrowed a little at base, sessile, loosely woolly on the upper surface, densely tomentose beneath. *Heads* of flowers rather large, roundish-ovoid, obtuse, crowded in a terminal subfastigiate corymb; *pedunc.les* thickish, densely lanuginous, often pale tawny, or nankeen-color; *involucre* at first a little longer than the disk, finally rather shorter, woolly at base, the leaflets very numerous, imbricated, unequal, lance-ovate, rather obtuse, slightly plicate, smooth, of a pearly white, the inner ones narrow, acute, greenish at base, or along the midrib; *disk* tawny, or light brown, the *florets* yellowish, very slender. *Akenes* oblong, minutely scabrous,—in the staminate heads abortive; *pappus* capillary, slightly tawny,—that of the staminate heads clavate, or the hairs thickened towards the apex. *Receptacle* nearly flat, scrobiculate.

Hab. Mica-slate range, near W. Chester: rare. *Fl.* August. *Fr.* Sept.

Obs. This handsome species was collected in 1830, by D. TOWNSEND, Esq.

6. G. DIOICUM, *L.* Stem simple, erect, with procumbent shoots from the base; radical leaves spatulate; corymb simple, clustered, terminal; inner leaflets of the involucre elongated, rather obtuse, colored. *Willd. Sp.* 3. *p.* 1882.
G. plantagineum, *var.* dioicum. *Eat. Man. p.* 159.
Antennaria dioica. *Lindl. Ency. p.* 700.

Dioicous Gnaphalium. *Vulgò*—Mouse-ear Cud-weed.

Root perennial. *Stem* 2 or 3 to 6 inches high, lanuginous, hoary with a bluish tinge, simple, mostly with 2 or 3 procumbent shoots from the base nearly as long as the stem. *Radical leaves* 1 to near 2 inches long, and 1 third to 2 thirds of an inch wide, spatulate, obtuse, attenuate at base, entire, obscurely 3-nerved, green and smoothish (or often loosely lanuginous) above, hoary and densely tomentose beneath; *stem-leaves* smaller, lanceolate, acute, entire, sessile, alternate, lanuginous on both sides,—those on the shoots or runners spatulate, small. *Heads* few (3 to 6 or 8) oblong, or subturbinate, in a dense terminal corymbose cluster; *involucre* lanuginous, the leaflets unequal, spatulate-linear, rather obtuse, often lacerate-dentate at apex, greenish at base, the summit white, or sometimes purplish,—the inner ones longest,—all shorter than the disk; *florets* very slender, almost concealed in the copious pappus. *Akenes* oblong, minutely scabrous, abortive in the staminate heads; *pappus* capillary, longer than the corolla, nearly white,—that of the staminate heads clavate. *Receptacle* convex, serobiculate.

Var. b. *plantaginifolium*, *Mx.* Radical leaves broader, spatulate-ovate, conspicuously 3-nerved; inner leaflets of the involucre acute. *Mx. Am.* 2. *p.* 128.

G. plantaginifolium. *Willd. Sp.* 3. *p.* 1882. *Pers. Syn.* 2. *p.* 420. *Ait. Kew.* 5. *p.* 17.

G. plantagineum. *Muhl. Catal. p.* 72. *Pursh, Am.* 2. *p.* 525. *Nutt. Gen.* 2. *p.* 146. *Bart. Phil.* 2. *p.* 104. *Ell. Sk.* 2. *p.* 327. *Bigel. Bost. p.* 300. *Torr. Comp. p.* 288. *Beck, Bot. p.* 179. *Eat. Man. p.* 159.

Antennaria plantaginea. *Lindl. Ency. p.* 700.

Vulgò—White Plantain. Plantain-leaved Cud-weed.

Stem 4 to 8 or 10 inches high. *Radical leaves* an inch or more in width, elliptic, or spatulate-ovate, mucronate, strongly nerved beneath, contracted at base to a narrow-margined petiole. Inner leaflets of the *involucre* lance-linear, acute.

Hab. Sterile knolls, in moist grounds: frequent. *Fl.* April–May. *Fr.* May–June.

Obs. The *G. plantagineum*, of Authors, is a stouter plant than the *G. dioicum*,—and certainly affords a strongly marked *variety*; but I doubt whether it can, with propriety, be considered any thing more. They are both frequent, on sterile banks in moist meadows and woodlands. Two or three additional species are enumerated in the U. States.

Sub-Tribe II. Senecioneæ. *Heads* never dioicous; when heterogamous, with the marginal florets pistillate, mostly in a single series, the rest perfect. *Corolla* of the pistillate florets ligulate, or rarely filiform. *Anthers* ecaudate. *Pappus* setaceous, many-rayed, nearly equal.

395. ARNICA. *L. Nutt. Gen.* 663.

[Etymology obscure: said to be corrupted from *Ptarmica*.]

Heads large, many-flowered, radiate. *Involucre* campanulate, the leaflets somewhat in a double series, nearly equal. *Style* of the disk-florets with the branches puberulent, truncate, or terminating in a short cone. *Akenes* not beaked; *pappus* setaceous, in a single series, uniform. *Receptacle* naked.

1. A. NUDICAULIS, *Nutt.* Hirsute; radical leaves opposite, decussate, elliptic-ovate, nerved, nearly entire; stem almost leafless, branched at summit into a few loosely-corymbose peduncles. *Beck, Bot. p.* 177. A. Claytoni. *Pursh, Am.* 2. *p.* 527. Also, *Eat. Man. p.* 29. Doronicum nudicaule. *Mx. Am.* 2. *p.* 121. *Pers. Syn.* 2. *p.* 455. *Muhl. Catal. p.* 77.

NAKED-STEM ARNICA. *Vulgò*—Lcopard's Banc.

Root perennial, coarsely fibrous. *Stem* 1 to 2 feet high, simple and scape-like, with a few peduncle-like branches at summit, striate, clothed with a roughish pubescence which is somewhat glandular and viscid. *Radical leaves* 2 to 4 inches long, and 1 to 2 or 2 and a half inches wide, mostly spreading on the ground, elliptic-ovate, or oblong-oval, rather obtuse, narrowed at base, sessile, opposite and crowded at the base of the stem, usually in 3 or 4 pairs, entire, or obsoletely dentate, often undulate on the margin, strongly nerved, hirsute, somewhat punctate; *cauline leaves* generally in a single pair near the middle of the stem, 1 to 2 inches long, and half an inch to an inch wide, lance-ovate, sessile, mostly opposite, —and a few smaller alternate bract-like leaves at summit, one at the base of each branch, or peduncle. *Heads* of flowers large (1 to 2 inches in diameter, including the rays), terminal on loosely-corymbose peduncles; *involucre* hirsute, the leaflets lanceolate, nearly equal, about as long as the disk, somewhat in a double series, connate at base; *rays* deep yellow, numerous, lance-oblong, 2 or 3-toothed at apex; *disk* greenish-yellow. *Akenes* somewhat compressed, linear-oblanceolate, striate-ribbed, sparsely pilose, nearly black when mature; *pappus* simple, setaceous, scabrous, nearly as long as the florets of the disk, alike on all the akenes, of a dirty white color. *Receptacle* flat, naked, scrobiculate.

Hab. Meadows, near Jennerville: rare. *Fl.* June. *Fr.* July.

Obs. This was collected at the above locality, in 1835, by WM. JACKSON, Esq.—but it is very rare in this County. I observed it in great abundance around Suffolk, in Virginia, in 1832—in full bloom in the middle of May. Two or three additional species are enumerated in the Western Territories of the U. States.

396. SENECIO. *L. Nutt. Gen.* 664.

[Latin, *Senex*, an old man; the pappus resembling a white beard.]

Heads mostly heterogamous, radiate, or discoid. *Involucre* sub-cylindric, the leaflets linear, often sphacelate or colored at apex, in a single series, with smaller accessory ones at base. *Style* of the perfect florets with the branches truncate and penicillate at apex, or terminating in a short puberulent cone. *Akenes* oblong, subterete, not beaked; *pappus* capillary, in several series, nearly equal, uniform. *Receptacle* naked.

† *Heads radiate; branches of the Styles truncate, penicillate.*

1. S. AUREUS, *L.* Radical leaves cordate-ovate, obtuse, serrate, on long petioles, cauline ones lance-oblong, pinnatifid, sessile; corymb simple, subumbellate; peduncles thickened at summit. *Beck, Bot. p.* 200.

Also ? S. Cymbalaria. *Pursh, Am.* 2. *p.* 530. *Eat. Man. p.* 335.

GOLDEN SENECIO.

Root perennial. *Stem* 1 to 2 feet high, striate, smoothish, branched above,—the lower branches elongated, axillary, distant, the upper ones crowded, or subum-

bellate at the summit of the stem, somewhat lanuginous. *Leaves* alternate, smooth,—the *radical* ones 1 to 3 inches long, and 3 fourths of an inch to near 2 and a half inches wide, ovate, more or less cordate at base, thinnish, crenate-serrate, the serratures slightly mucronate, *petioles* 1 or 2 to 6 or 8 inches long, —*stem-leaves* 1 to 3 inches long, sessile, amplexicaul, deeply pinnatifid, the segments incised-dentate. *Heads* of flowers middle-sized, terminal on the corymbose branches; branches resembling peduncles, the upper ones subumbellate, somewhat lanuginous, and sparsely bracteate, a little thickened near the involucre; *involucre* lanuginous at base, the leaflets narrow, linear, acute, smooth, purplish at apex, in a single series, with 2 or 3 small bract-like leaflets at base; *rays* and *disk* yellow; branches of the *style* truncate, those of the disk-florets with a pencil-like pubescence at the end. *Akenes* linear, prominently striate-ribbed, smooth, of a pale straw-color; *pappus* capillary, scabrous, white, as long as the disk-florets, alike on all the akenes. *Receptacle* flat, naked, roughish-scrobiculate.

Hab. Banks of streams; meadows, & woodlands: frequent. *Fl.* May-June. *Fr.* July.

Obs. Mr. *Nuttall* thinks the S. *Cymbalaria*, of Pursh, may be only a starved *variety* of this; and I have specimens, with the radical leaves sub-lyrate, the terminal segment rounded, and truncate at base, which tend to confirm that opinion.

2. S. obovatus, *Muhl.* Radical leaves obovate, crenate, petiolate, cauline ones oblong, pinnatifid, sessile; corymb nearly simple, subumbellate; peduncles scarcely thickened at summit. *Beck, Bot. p.* 200.

Obovate Senecio.

Root perennial. *Stem* 9 to 15 inches high, striate, smoothish, corymbosely branched at summit. *Leaves* alternate, smooth,—the *radical* ones 1 to near 3 inches long, and 3 fourths of an inch to an inch and half wide, varying from roundish-obovate to spatulate, crenate, somewhat fleshy (when dry thickish and subcoriaceous), often purplish, narrowed more or less abruptly at base to a tapering margined *petiole* half an inch to 2 inches in length; *stem-leaves* 1 to 3 or 4 inches long, oblong, mostly obtuse, pinnatifid and dentate,—those near the base of the stem mostly spatulate-oblong, and crenately incised. *Heads* of flowers rather small, terminal on the corymbose peduncle-like branches; branches slender, scarcely thickened at the involucre, lanuginous at base, sparingly bracteate, the upper ones crowded or subumbellate; *involucre* smoothish, the leaflets lance-linear, acute, with 1 or 2 minute subulate bracts at base; *rays* and *disk* yellow. *Akenes* linear-oblong, striate, smooth; *pappus* capillary, white.

Hab. Along Schuylkill; Black Rock: not common. *Fl.* April—May. *Fr.* June.

Obs. Collected at the above locality, in 1830, by D. Townsend, Esq. An agricultural writer, in New York, denounces the plant—under the name of "*Squaw-weed*"—as poisonous to sheep; but I have no knowledge of its properties.

3. S. Balsamitæ, *Muhl.* Radical leaves oblong-lanceolate, crenate-dentate, on long petioles, cauline ones lance-oblong, pinnatifid, sessile; corymb compound, subumbellate. *Beck, Bot. p.* 200. (*excluding the Synonym of Mx.*)

Balsamita-like Senecio. *Vulgò*—Groundsel.

Root perennial. *Stem* 1 to 2 feet high, striate, sligh ly lanuginous, more densely so at base, subsimple, corymbose at summit. *Leaves* alternate, more or less pubescent,—the *radical* ones 1 to 3 inches long, and 1 third to 3 fourths of an inch wide, varying from elliptic to oblong-lanceolate, rather obtuse, crenately serrate-dentate, narrowed at base to a slender pubescent *petiole* 1 or 2 to 6 inches long;

stem-leaves 1 to 2 or 3 inches long, sessile, with a loose flocculent tomentum at base, lance-oblong, rather acute, pinnatifid, the segments subcuneate, dentate at apex,—the lower stem-leaves often somewhat lyrate. *Heads* of flowers rather small, in a terminal somewhat compound and coarctate fastigiate corymb, the peduncle-like branches subumbellate, lanuginous at base, very sparingly bracteate; *involucre* smoothish, the leaflets linear-lanceolate, acute, purplish at apex, with 1 or 2 minute subulate bracts at base; *rays* and *disk* yellow,—the rays linear-oblong, minutely 3-toothed at apex (linear-lanceolate, deeply 3-cleft, *Ell.*). *Akenes* oblong, angular-striate, minutely hispid or scabrous on the angles (naked, *Ell.*), reddish-tawney; *pappus* capillary, white.

Hab. Moist sterile fields, and meadows: frequent. *Fl.* May. *Fr.* June.

Obs. This is often abundant in moist places on Serpentine banks, and other sterile soils. Our plant differs somewhat from Mr. *Elliott's* description, and may be distinct from his. *Pursh* and Dr. *Beck* cite the S. *lyratus*, *Mx.* (S. *lobatus*, *Pers. Ell.*) as a synonym of this; but ours is widely different from that plant,—as I have received it from my friend, the Rev. M. A. CURTIS, of North Carolina.

†† *Heads discoid; branches of the Styles conic at apex.*

4. S. HIERACIFOLIUS, *L.* Stem virgate, paniculate; leaves lance-oblong, acute, deeply unequally and acutely dentate, sessile and semiamplexicaul; involucre cylindric-oblong, smooth, with linear-setaceous bracts at base. *Beck*, *Bot. p.* 201.

Erecthites prealta. *Raf. Less. Syn. p.* 395.

HIERACIUM-LEAVED SENECIO. *Vulgò*—Fire-weed.

Root annual. *Stem* 2 to 4 or 5 feet high, stout, succulent and tender when young, striate-sulcate, more or less hairy, sometimes nearly smooth, paniculately branched, occasionally subsimple and virgate. *Leaves* 3 to 6 or 8 inches long, and half an inch to 2 inches wide, alternate, lance-oblong, acute, very unequally dentate, with the teeth mucronate, slightly scabrous above, somewhat pilose beneath, especially on the midrib, and scabrous-pubescent on the margin, narrowed below the middle, sessile, sagittate-auriculate and semi-amplexicaul at base. *Heads* of flowers middle-sized, often numerous, in small cymose corymbs terminating the paniculate branches; *peduncles* somewhat pilose, bracteate, the bracts subulate-linear; *involucre* subcylindric, slightly ventricose, half an inch to 3 quarters in length, smooth, the leaflets sublinear, acute, scarious on the margin, equal, a little longer than the disk, striate, with numerous subulate-linear or setaceous bracts at base; *rays* none; florets of the *disk* numerous, very slender, whitish, or ochroleucous. *Akenes* oblong, striate-ribbed, pubescent, dark brown; *pappus* very white, copious and silky-pilose, finally rather longer than the florets. *Receptacle* flat, naked, roughish-dotted.

Hab. Moist grounds; recent clearings, &c. common. *Fl.* July—Aug. *Fr.* Sept.

Obs. This plant is remarkable for its prevalence in newly cleared grounds,—especially in and around the spots where brush-wood has been burned;—whence its common name, "*fire-weed.*" The specific name of *sonchifolius* would have been more appropriate for this species,—as its entire habit is much more that of a *Sonchus*, than a *Hieracium*. Ten or twelve additional species are enumerated in the U. States; and a number of new species, from British America, are figured by Prof. *Hooker*.

397. CACALIA. *L. Nutt. Gen.* 645.
[An ancient Greek name; etymology obscure.]

Heads mostly homogamous, discoid, few-flowered, erect. *Involucre* ovoid-oblong, the leaflets lance-oblong, foliaceous, scarious on the margin, in a single series, mostly without smaller accessory ones at base. *Style* of the perfect florets with the branches truncate and penicillate at apex. *Akenes* oblong, smoothish; *pappus* capillary, in several series, uniform. *Receptacle* mostly naked.

1. C. ATRIPLICIFOLIA, *L.* Smooth and glaucous; leaves petiolate; lower ones broad-cordate, sinuate-angled and dentate, upper ones subrhomboid, and cuneate, coarsely dentate; heads corymbose, erect; involucre about 5-flowered. *Beck, Bot. p.* 199.

ATRIPLEX-LEAVED CACALIA. *Vulgò*—Indian Plantain.

Root perennial. *Stem* 3 to 5 or 6 feet high, stout, striate, smooth, often purple, but glaucous withal, branching. *Leaves* alternate, smooth, conspicuously nerved, pale or yellowish-green above, glaucous beneath,—the *radical* and *lower* ones 4 to 6 inches long, and about as wide as long, more or less cordate, angulate-dentate, and sublobed, on striate *petioles* 3 to 6 or 8 inches long,—*stem-leaves* gradually smaller as they ascend, varying from broad-cordate to deltoid, subrhomboid, and cuneate, with coarse angular lobe-like mucronate teeth,—the small uppermost leaves often oblong and entire,—*petioles* gradually shorter. *Heads* of flowers small, numerous, corymbose at the summit of the branches; *peduncles* angular, smooth, pale green or whitish, bracteate, the bracts small; *involucre* ovoid-oblong, terete (resembling that of *Prenanthes*, but erect), smooth, the leaflets usually 5, lance-linear, or oblong, rather obtuse, equal, green, with scarious margins, and often 1 or 2 minute bracts at base; *rays* none; *disk-florets* about 5, tubular, greenish-white, sometimes tinged with purple. *Akenes* elliptic-oblong, ribbed, minutely rugose-dotted, naked, viscid, greenish-brown; *pappus* hair-like, scabrous, white, deciduous, leaving a white ring. *Receptacle* with a linear-lanceolate angular membranous column in the centre, which is 2 or 3-cleft at apex, longer than the akenes, and apparently compounded of connate chaffy scales,—as remarked by Mr. *Elliott*.

Hab. Woodlands, & moist shaded grounds: frequent. *Fl.* July-Aug. *Fr.* Sept-Octo.

Obs. The *leaves* are a popular application to wounds; but the virtues are probably imaginary. Four or five additional species are enumerated in the U. States.

CLASS XVIII. GYNANDRIA.

Order 1. Monandria.*

§ I. Pollen *powdery or consisting of granules in a loose state of cohesion.*

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* The plants of this, and the next succeeding Order, belong to a singular and very curious *natural* Family (*Nat. Ord.* 240. *Lindl.* ORCHIDEÆ.). They are all *herbaceous*, and frequently *stemless;* the *roots* tuberous, or fibrous (often coarse fleshy and fasciculate); *leaves* alternate, simple, entire; *flowers* in spikes, racemes, or panicles, sometimes solitary; *perianth* with a sub-ringent 6-parted limb,—the 3 outer segments usually colored, of which the odd one is mostly uppermost by the twisting of the ovary,—the 3 inner segments more petaloid, of which

a. Anther *parallel with the stigma, and erect.*

398. GOODYERA. *Br. Nutt. Gen.* 708.
[Named after *John Goodyer;* an English Botanist.]

Perianth ringent; the outer segments herbaceous,—the upper one vaulted, the 2 lateral ones placed beneath the saccate entire *lip*. *Column* free. *Pollen* angular. *Stigma* prominent, roundish.

1. G. PUBESCENS, *Br.* Radical leaves ovate, reticulate, petiolate; scape, with its flowers, and sheathing scales, pubescent; outer lateral segments of the perianth ovate; lip roundish-ovate, acuminate. *Beck, Bot. p.* 343.
Satyrium repens. *Mx. Am.* 2. *p.* 157.
Neottia pubescens. *Willd. Sp.* 4. *p.* 76. *Pers. Syn.* 2. *p.* 511. *Muhl. Catal. p.* 80. *Pursh, Am.* 2. *p.* 590. *Bigel. Bost. p.* 323.
PUBESCENT GOODYERA. *Vulgò*—Rattlesnake Plantain.

Root perennial, coarsely fibrous, and somewhat creeping. *Leaves* radical, 1 to 2 inches long, and 3 fourths of an inch to an inch and quarter wide, somewhat inclining to spatulate-ovate, acute, mostly 5-nerved, smooth, the upper surface dark green, whitish along the midrib and nerves, reticulated with broad bluish-white veins, and minutely punctate, tapering at base to a flat *petiole* about an inch long. *Scape* 6 to 12 or 15 inches high, erect, pubescent, bearing a few scattered lanceolate acuminate sheathing scale-like leaves. *Flowers* rather small, and somewhat crowded in an oblong terminal bracteate *spike* 2 to 4 inches in length; *bracts* ovate-lanceolate, acuminate, pubescent and ciliate, a little longer than the ovaries. *Perianth* greenish-white, ringent,—the outer and upper segment lance-ovate, vaulted, cohering with the two lateral inner ones,—the lateral outer segments orbicular-ovate, concave, with a short abrupt acumination; *lip* orbicular-ovate, saccate, or gibbous beneath, abruptly acuminate, entire. *Capsule* oblong-ovoid, or elliptic, pubescent.

Hab. Woodlands, and shady thickets: frequent. *Fl.* July. *Fr.* Sept—Octo.

Obs. There is one other species, nearly allied to this, which is common to Europe and the Northern parts of this Continent, including New England.

399. SPIRANTHES. *Rich. Lindl. Ency. p.* 749.
[Gr. *Speira*, a cord; the flowers being spiral like the strands of a rope.]

Spike spiral: *Perianth* with the inner segments connivent; *lip* paral-

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the odd one, called the *lip*, is undermost, of a different form from the others, frequently lobed, or fringed, and very often spurred at base; *stamens* 3, united in a central *column*, the 2 lateral ones usually abortive (reducing the plant to the artificial Order, *Monandria*), or sometimes the central one abortive and the lateral ones perfect (artificial Order, *Diandria*); *anther* persistent, or deciduous, 2- 4- or 8-celled; *pollen* either powdery, or cohering in definite, or indefinite, waxy masses (*pollinia*), which either adhere constantly to a gland, or become loose in their cells; *ovary* inferior; *style* forming part of the column of the stamens; *stigma* a viscid concave space in front, and near the summit, of the column; *fruit* mostly a *capsule*, 1-celled, with 3 flat longitudinal *ribs*, and opening with 3 intermediate *valves* which are keeled (rendering the immature capsule apparently 6-ribbed), and fitted to the inner edges of the ribs as in a frame,—all permanently united at base and apex; *seeds* parietal, adhering to the placental suture in the middle of each valve, numerous, often resembling fine saw-dust,—the *testa* loose and arillus-like, reticulated, mostly contracted at each end.

lol with the column, shovel-shaped, unguiculate, with 2 callous processes at base. *Column* free, clavate, bidentate at summit. *Ovary* oblique; *stigma* prominent, rostrate.

1. S. TORTILIS, *Rich.* Radical leaves lance-linear; scape sheathed; flowers spirally twisted; lip somewhat 3-lobed, the middle lobe larger, crenulate. *Beck, Bot. p.* 343.
Ophrys æstivalis? *Mx. Am.* 2. *p.* 157.
Neottia tortilis. *Willd. Sp.* 4. *p.* 74. *Pers. Syn.* 2. *p.* 511. *Muhl. Catal. p.* 80. *Pursh, Am.* 2. *p.* 589. *Nutt. Gen.* 2. *p.* 190. *Bart. Phil.* 2. *p.* 139. *Ell. Sk.* 2. *p.* 491. *Bart. Am.* 1. *p.* 127 (ICON, *tab.* 35. *f.* 2.). *Florul. Cestr. p.* 94. *Torr. Comp. p.* 320. *Eat. Man. p.* 234.
Also? N. æstivalis. *Pers. l. c.*

TWISTED SPIRANTHES. *Vulgò*—Lady's Traces, or Tresses.

Root perennial, fleshy and fasciculate, whitish. *Leaves* radical, 3 to 6 inches long, and 1 sixth to near 1 third of an inch wide, acute, narrowed at base, smooth, mostly withering and disappearing before the flowers expand, leaving the plant apparently leafless. *Scape* 9 to 18 inches high, erect, slender, smooth, sheathed with acuminate scales. *Flowers* small, white, in a spirally twisted terminal smoothish *spike* 2 to 4 inches long; *bracts* elliptic, or ovate-oblong, acuminate, smooth, or minutely pubescent, longer than the ovaries. *Capsule* smooth.

Var. b. *gracilis, Torr.* Radical leaves elliptic, or ovate-oblong, lip spatulate, crisped.
S. gracilis. *Beck, Bot. p.* 343.
Neottia gracilis. *Bigel. Bost. p.* 322. *Eat. Man. p.* 234.
N. tortilis, *var.* gracilis. *Torr. Comp. p.* 320.

Radical leaves 1 to 2 inches long, and 1 third to half an inch wide, elliptic-oblong, acute, thinnish, nerved, smooth, narrowed at base to a short membranous *petiole*, mostly enduring longer than the preceding.

Hab. Moist grounds; meadows, &c. frequent. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. The *Ophrys æstivalis*, of *Michaux*, is generally cited as a Synonym of this; and if correctly so, the phrase "*scapo folioso*" is unusually erroneous, for that Author. The *Neottia gracilis*, of *Bigelow*, (*Spiranthes gracilis*, *Beck*), is pretty distinct in its radical leaves (approaching N. *spiralis*, of Europe), and somewhat different in its flowers; but I have concluded to follow Dr. *Torrey*, for the present, in reducing it to a *variety*. It was collected by D. TOWNSEND, Esq. in 1829.

2. S. CERNUA, *Rich.* Leaves linear-lanceolate, nerved; scape sheathed; flowers obliquely recurved and cernuous, in a dense spike; lip oblong, obtuse, crisped and crenate. *Beck, Bot. p.* 344.
Ophrys cernua. *Mx. Am.* 2. *p.* 158.
Neottia cernua. *Willd. and most of the Authors here cited.*

NODDING SPIRANTHES.

Root perennial, fleshy, fasciculate. *Leaves* radical, or near the base of the scape, 3 or 4 to 10 or 12 inches long, and 1 fourth to half an inch wide, linear-lanceolate, acute, somewhat fleshy or succulent, narrowed below the middle, sessile, sheathing at base. *Scape* 6 to 12 or 15 inches high, stouter and more succulent than the preceding, smoothish at base, pubescent above, bearing loosely-sheathing acuminate scales, or imperfect leaves (sometimes leafy). *Flowers* rather large-

greenish-white, sometimes ochroleucous, somewhat pubescent, numerous, obliquely recurved, crowded in an oblong terminal pubescent *spike* 2 or 3 to 6 inches in length; *bracts* lance-ovate, acuminate, nerved, pubescent, longer than the ovaries. *Lip* oblong, mostly obtuse (acute, *Authors*), crisped and crenate. *Capsule* obliquely ovoid-oblong, obtuse, pubescent.

Hab. Moist thickets, and low grounds: frequent. *Fl.* August—Sept. *Fr.* Octo·

Obs. This species, also, presents some *varieties*—one I have seen, from New Jersey, with the scape quite leafy, the leaves fleshy. These are all the known species in the U. States.

b. Anther *terminal, opercular or opening like a lid.*

400. ARETHUSA. *L. Nutt. Gen.* 715.

[Poetically named from *Arethusa*, a nymph of Diana.]

Perianth subringent,—the *segments* cohering at base, connivent above, and cucullate. *Lip* united at base with the *column*, deflected at apex, bearded internally. *Pollen* angular.

1. A. BULBOSA, *L.* Leafless; scape sheathed, 1-flowered. *Beck, Bot. p.* 346. ICON, *Bart. Am.* 2. *tab.* 53. *f.* 1.

BULBOUS ARETHUSA.

Root perennial, coarsely fibrous, bearing a globose tuber at the base of the scape. *Leaves* mostly 0. *Scape* 3 or 4 to 9 inches high, striate, smooth, bearing 3 or 4 loosely-sheathing scales;—from the upper sheath there often finally proceeds a linear-lanceolate, cuneate, or spatulate-linear acute nerved *leaf*. *Flower* mostly solitary, terminal, large, fragrant, deep bright purple, with 2 unequal *bracts* at base,—one of the bracts ovate and amplexicaul, the other sublinear, or sometimes short and lance-ovate. Segments of the *perianth* lanceolate, 5 of them connivent, vaulted or curved forward, connate and tapering below; *lip* broad, conduplicate below, the apex spreading, deflected, wavy and crenulate on the margin, bearded or crested, and somewhat spotted with yellow, on the inner or upper surface. *Column* shorter than the lip.

Hab. Sphagnous swamps; Great Valley: rare. *Fl.* May. *Fr.*

Obs. This beautiful little plant is very rare here. It has, however, been found by Mr. JOSEPH JACOBS, and subsequently by D. TOWNSEND, Esq. Dr. *Bigelow* remarks, that the upper sheath on the scape, finally "expands into a short lanceolate leaf"; but, as far as I have observed, there is a leaf finally *protruded from* the upper sheath, which is quite distinct from the sheath itself. This is the only species of the genus, as it is now restricted.

401. POGONIA. *Juss. Nutt. Gen.* 712.

[Greek, *Pogon*, beard; in allusion to the bearded lip of the flower.]

Perianth with the segments distinct. *Lip* sessile, with a beard-like crest on the inner or upper side. *Pollen* farinaceous.

1. P. OPHIOGLOSSOIDES, *Br.* Scape with an oval-lanceolate leaf near the middle, and a foliaceous bract near the flower; segments of the perianth nearly equal; lip fimbriate. *Beck, Bot. p.* 344. ICON, *Bart. Am.* 3. *tab.* 77.

Arethusa ophioglossoides. *Mx. Am.* 2. *p.* 159. *Willd. Sp.* 4. *p.* 80. *Pers. Syn.* 2. *p.* 512. *Muhl. Catal. p.* 81. *Pursh, Am.* 2. *p.* 590. *Bigel. Bost. p.* 325.

Ophioglossum-like Pogonia.

Root perennial, of long coarse subfasciculate fibres. *Scape* 9 to 12 or 15 inches high, slender, smooth, with a short membranaceous sheath at base,—near the middle a solitary sessile oval-lanceolate *leaf*, which is 1 to 4 inches long, and 1 third of an inch to an inch wide, and near the summit, or at the base of the flower, a small leaf-like *bract*;—sometimes, though rarely, a solitary slender oblanceolate *radical* leaf 3 or 4 inches in length. *Flower* mostly solitary, terminal, rather large, red, or pale purple. Segments of the *perianth* lance-oblong, rather obtuse, all nearly of the same size and color, distinct and somewhat spreading; *lip* spatulate-oblong, crested with beard-like processes on the upper side, and fringed on the margin. *Column* thick, much shorter than the lip. *Capsule* elliptic-oblong, smooth.

Hab. Swamps, in the Mica-slate: not very common. *Fl.* June—July. *Fr.* Aug.

Obs. This occurs in the swamps of the Mica-slate range; but is rather scarce elsewhere. It was first collected, in this County, by Mr. Joseph Jacobs.

2. P. verticillata, *Nutt.* Scape with a verticil of 5 elliptic-obovate leaves at summit; segments of the perianth unequal, the 3 outer ones very long and sublinear; lip 3-lobed, the middle lobe dilated, undulate. *Beck, Bot. p.* 345. Icon, *Bart. Am.* 2. *tab.* 67.

Arethusa verticillata. *Willd. Sp.* 4. *p.* 81. *Muhl. Catal. p.* 81. *Pursh, Am.* 2. *p.* 591. *Bigel. Bost. p.* 325.
Also, A. medeoloides. *Pursh, l. c.*

Verticillate Pogonia.

Root perennial, of several long coarse fleshy subfasciculate fibres, which extend horizontally near the surface of the ground. *Scape* 9 to 15 inches high, succulent, terete, smooth, of a dingy purple color, and somewhat glaucous, mostly with 1 or 2 lance-oblong sessile scales at base. *Leaves* mostly 5, 1 to 3 inches long, and 3 fourths of an inch to near 2 inches wide, varying from ovate to broad-oval, and obovate, acute at each end, often with a short abrupt acumination, smooth, sessile, alternate, but crowded into a verticil at the summit of the scape. *Flower* mostly solitary, terminal, pedunculate, somewhat nodding,—the 3 outer segments of the *perianth* of a greenish brown, or dingy purple, and half an inch to 2 and a half inches long, lance-linear, attenuated, the margins involute towards the apex, the inner segments paler, lance-oblong, or oblanceolate, obtuse, connivent, scarcely 1 third the length of the outer ones. *Lip* shorter than the inner segments of the perianth, papillosely crested along the centre, margined, the margins inflected. *Column* shorter than the lip, incurved, subclavate. *Capsule* elliptic-oblong, smooth, an inch to an inch and half in length, erect on a clavate striate-sulcate *peduncle* about as long as the capsule.

Hab. Moist woodlands: frequent. *Fl.* May—June. *Fr.* July—August.

Obs. The whorled leaves of this species give it much of the habit of *Gyromia*. The long slender outer segments of the perianth remind one of the beards of a *cat-fish*. There is one other species, in the Southern States.

402. TRIPHORA. *Nutt. Gen.* 713.

[Abbreviated from the Gr. *Triantophoros*; literally, bearing three flowers.]

Perianth with the segments distinct, equal and connivent. *Lip* unguiculate, not crested. *Column* spatulate, flat, without wings. *Pollen* farinaceous.

1. T. PENDULA, *Nutt.* Root tuberous; stem leafy, about 3-flowered near the summit; leaves ovate, amplexicaul; flowers axillary, pedunculate; fruit pendulous or nodding. *Beck, Bot. p.* 346.
Arethusa parviflora. *Mx. Am. 2. p.* 160.
A. pendula. *Willd. Sp. 4. p.* 82. *Muhl. Catal. p.* 81. *Pursh, Am. 2. p.* 590.
A. trianthophoros. *Pers. Syn. 2. p.* 512.
Pogonia pendula. *Lindl. Ency. p.* 756.

PENDULOUS TRIPHORA.

Root perennial, bearing cylindric-oblong succulent tubers often an inch in length. *Stem* 3 to 6 or 8 inches high, simple (frequently growing in clusters), terete, or slightly angled by the decurrent leaves, fleshy, smooth, often striately pubescent at base, generally purplish. *Leaves* few (3 to 5 or 7), alternate, 1 third to 2 thirds of an inch long, and 1 fourth to half an inch wide, ovate and rather acute, sometimes obtuse and orbicular-ovate, sessile, rather erect and concave, or sheathingly amplexicaul, smooth, dingy purplish-green,—the upper ones smaller and bract-like. *Flowers* few (1 to 3 or 4), generally pale violet-purple with tinges of green (sometimes milk-white), solitary, terminal and axillary, on *peduncles* 1 third to half an inch long, rather erect when in bloom, pendulous or nodding before and after. Segments of the *perianth* lanceolate, nearly equal, connivent. *Lip* scarcely as long as the perianth-segments, spatulate, somewhat 3-lobed, unguiculate, a little rough but not crested. *Column* free, spatulate, erect; *anther* violet-purple. *Capsule* elliptic, or obovoid-oblong, acuminate, smooth.

Hab. Rich, rocky woodlands: frequent. *Fl.* August—Sept. *Fr.* October.

Obs. The only known species in the U. States.

403. CALOPOGON. *Br. Nutt. Gen.* 714.

[Greek, *Kalos*, handsome, and *Pogon*, beard; alluding to the beard of the flower.]

Flowers resupinate: *Perianth* with the segments distinct, spreading. *Lip* on the upper side of the flower, erect, unguiculate, bearded in front. *Column* free, declined, incurved, winged at summit. *Pollen* angular.

1. C. PULCHELLUS, *Br.* Leaf mostly solitary, sub-radical, ensiform, nerved; scape few-flowered. *Beck, Bot. p.* 345. ICON, *Bart. Am. 2. tab.* 68.
Limodorum tuberosum. *Mx. Am. 2. p.* 159.
Cymbidium pulchellum. *Willd. Sp. 4. p.* 105. *Pers. Syn. 2. p.* 516. *Muhl. Catal. p.* 81. *Pursh, Am. 2. p.* 592. *Bigel. Bost. p.* 326. *Eat. Man. p.* 116.

BEAUTIFUL CALOPOGON.

Root perennial, fibrous, and tuberous, the base of the scape mostly enlarged into a subglobose tuber. *Scape* 12 to 18 inches high, rather slender, smooth, mostly with a solitary leaf near the base, and a couple of cylindric striate sheaths below the leaf; *leaf* 6 to 9 inches long, and half an inch to an inch wide, erect and somewhat rigid, ensiform, or lanceolate, acute, striate-nerved, smooth, narrowed and sheathing at base. *Flowers* bright reddish purple, rather large, fragrant, few and distant (4 to 8 or 10), in a terminal bracteate spike, the rachis flexuose; *bracts* ovate-lanceolate, with a slender acumination, shorter than the ovary. Segments of the *perianth* lanceolate, spreading; *lip* and *column* apparently resupinate, or their usual relative position inverted,—the *lip* being on the upper side, erect, much dilated at summit, narrowed below, conspicuously bearded in front with whitish

and orange-colored clavate hairs; the *column* at the lower side of the flower, declining from the base of, and nearly as long as, the lip, the summit curved upwards, and winged on each side with a dilated semi-rhomboid margin. *Capsule* elliptic-ovoid, smooth.

Hab. Swamps, in the Mica-slate: not common. *Fl.* June—July. *Fr.* August.

Obs. This elegant plant, which was first collected, here, by Mr. Joseph Jacobs, has been since found, by D. Townsend, Esq. in the swamp at the head of Chester Creek, West Chester,—and is sometimes abundant in a few of the Mica-slate swamps; but it is by no means generally distributed through the County. It is the only ascertained species of the genus:—though there is a narrow-leaved *variety* (var. *graminifolia, Ell.*) in the South, which I have received from my friend the Rev. M. A. Curtis,—and which may be, as Mr. *Elliott* supposed, specifically distinct.

§ II. Pollen *cohering in waxy masses, which are pedicellate, with glands at the base of the pedicels.* Anthers *of two distinct vertical cells near the top of the column.*

404. ORCHIS. *L. Nutt. Gen.* 706.

[An ancient Greek name of the plant.]

Perianth ringent. *Lip* broad, entire, spurred at base on the under side. *Pollinia* pedicellate; *glands* of the pedicels contained in one common little pouch.

1. O. spectabilis, *L.* Leaves 2, radical, elliptic; scape angular, naked, few-flowered; bracts longer than the flowers; spur clavate, rather shorter than the ovary. *Beck, Bot. p.* 347.
O. humilis. *Mx. Am.* 2. *p.* 155. Also, *Pers. Syn.* 2. *p.* 506.

Showy Orchis. *Vulgò*—Priest in the Pulpit.

Root perennial, of coarse fleshy fasciculate fibres. *Leaves* usually a single pair at the root, or base of the scape, 3 to 5 inches long, and 2 to 3 or 4 inches wide, varying from elliptic-oblong to sub-orbicular, somewhat fleshy, smooth, bluish-green, narrowed at base to a short sheathing *petiole*,—the petioles embraced by 1 or 2 membranaceous sheaths. *Scape* 4 to 6 or 8 inches high, 5-angled, smooth. *Flowers* few (4 to 6 or 8) and rather distant, in a terminal *spike*, which appears leafy from the large oblong-lanceolate foliaceous *bracts*. Segments of the *perianth* cucullately connivent, pale bluish-purple,—the lip and spur white; *lip* broad-ovate, entire; *spur* enlarged at apex, obtuse. *Capsule* elliptic, acuminate, smooth.

Hab. Rich woodlands: frequent. *Fl.* May. *Fr.* August.

Obs. A handsome little plant. The genus has been so cut down, and divided, that I believe this is the only species now left to it, in the U. States.

405. PLATANTHERA. *Rich. Lindl. Ency. p.* 748.

[Greek, *Platys*, broad, and *Anthera*, an anther; from the width of that organ.]

Perianth vaulted. *Lip* narrow, entire, spurred at base. *Cells* of the *anther* widely divided at their base by the broad interposed stigma. *Pollinia* pedicellate; *glands* of the pedicels naked.

1. P. orbiculata, *Lindl.* Leaves 2, radical, orbicular; scape with 2 or 3 bract-like leaves, many-flowered; bracts shorter than the flowers;

lip lance-linear, obtuse; spur longer than the ovary. *Beck, Bot. p.* 347.
Orchis rotundifolia. *Muhl? Catal. p.* 80. *Nutt. Gen. 2. p.* 189. Not of *Pursh.*
O. orbiculata. *Pursh, Am. 2. p.* 588. *Bigel. Bost. p.* 319.
Habenaria orbiculata. *Torr. Comp. p.* 318. *Eat. Man. p.* 163.
ORBICULAR PLATANTHERA.

Root perennial, of coarse fleshy fasciculate fibres. *Leaves* a single pair at the base of the scape, 4 to 6 inches long, and 3 to 5 inches wide, orbicular, inclining more or less to ovate, smooth, fleshy, bluish green, subsessile, spreading flat on the ground, with 1 or 2 membranaceous sheaths below them embracing the scape. *Scape* 9 to 18 inches high, somewhat angular, smooth, bearing about 3 small alternate lanceolate sessile bract-like leaves. *Flowers* numerous, in a loose terminal bracteate *raceme* 4 to 6 inches in length; *bracts* lanceolate, nearly as long as the pedicel and ovary. Outer segments of the *perianth* green, longitudinally veined, minutely papillose, the upper one ovate, obtuse, the inner ones white; *lip* longer than the segments, sublinear, entire, obtuse; *spur* subclavate, longer than the ovary and pedicel; *pollinia* clavate, or pyriform, lodged in a groove, one on each side of the erect arch over the throat of the flower; *ovary* oblong, angular, spirally twisted, pedicellate.

Hab. Moist woodlands; West Chester: rare. *Fl.* June. *Fr.*

Obs. This was first detected here, in 1835, by Mr. JOSHUA HOOPES, in Patton's woods, near the Borough of West Chester;—a circumstance somewhat remarkable,—as the locality has been diligently explored, almost every season, for the last twenty years. There is one other species in the U. States.

406. HABENARIA. *Willd. Nutt. Gen.* 707.

[Latin, *Habena*, a thong, or rein; in allusion to the long spur of the lip.]

Perianth ringent. *Lip* dilated, toothed, lobed, or fringed, spurred at base. *Pollinia* pedicellate; *glands* of the pedicels naked, distant.

1. H. HERBIOLA, *Br.* Lip oblong, obtuse, toothed on each side at base; palate 1-toothed; spur filiform, shorter than the ovary; bracts rather erect, longer than the flowers. *Beck, Bot. p.* 347.
Orchis herbiola. *Pursh, Am. 2. p.* 743. *Florul. Cestr. p.* 93.

Root perennial, of coarse fleshy fasciculate fibres. *Stem* 12 to 18 inches high, simple, somewhat angular and flexuose, smooth, leafy, with 1 or 2 oblong sheaths at base. *Leaves* about 3, alternate, 3 to 6 inches long, and 3 fourths of an inch to 2 inches wide, varying from elliptic-lanceolate to lance-oblong and linear-lanceolate, mostly acute, smooth, sessile and sheathing at base. *Flowers* rather small, in a terminal bracteate *spike* 3 to 6 or 8 inches in length; *bracts* lanceolate, acuminate, 3-nerved, smooth,—the lowest ones elongated, foliaceous, 2 or 3 times as long as the flowers, gradually shorter above, the upper ones scarcely as long as the flowers. Segments of the *perianth* ovate-oblong, obtuse, the outer ones green, the inner ones greenish-yellow; *lip* ovate-oblong, obtuse, with a tooth on each side at base, and a tooth-like process or elevation on the palate; *spur* slightly clavate, rather shorter than the sessile ovary.

Hab. Swampy thickets: frequent. *Fl.* June. *Fr.* September.

Obs. This species has been found in various places within the County, since my Catalogue was published.

2. H. BRACTEATA, *Br.* Lip linear-oblong, the apex bifidly emarginate, with an obsolete central tooth; segments of the perianth conniv-

ent, the lateral ones ovate and broader; spur very short, obtuse, somewhat inflated and didymous; bracts spreading, longer than the flowers. *Beck, Bot. p.* 348.

Orchis bracteata. *Willd. Sp.* 4. *p.* 34. *Pursh, Am.* 2. *p.* 587. *Nutt. Gen.* 2. *p.* 189. *Bigel. Bost. p.* 320.

Satyrium bracteatum. *Pers. Syn.* 2. *p.* 507. *Muhl. Catal. p.* 80.

Bracteate Habenaria.

Root perennial, a fascicle of short thick fleshy fibres, and sometimes tubers. *Stem* 6 to 9 inches high, smooth, leafy, sheathed at base. *Leaves* about 3, alternate, an inch and half to near 3 inches long, and half an inch to an inch wide, elliptic-lanceolate, acute (sometimes the lower one spatulate-obovate and obtuse), smooth, sessile and sheathing at base. *Flowers* small, in a terminal bracteate *spike* 2 to 3 inches in length; *bracts* linear-lanceolate, veined, the lower ones about twice as long as the flowers, the upper ones scarcely longer. Segments of the *perianth* pale green, considerably shorter than the lip, the lateral outer ones obliquely ovate; *lip* oblong, sometimes spatulate-linear, depending, 3-toothed at apex, the middle tooth very short, or obsolete; *spur* scarcely half as long as the lip, inflated or saccate, and apparently didymous or 2-lobed.

Hab. Great Valley, near Brooke's Mill: rare. *Fl.* May. *Fr.*

Obs. Collected in 1833, at the above locality, by Mr. Geo. W. Hall.

3. H. tridentata, *Hook.* Lip cuneate-oblong, 3-toothed at apex; segments of the perianth connivent, oblong-ovate, obtuse; spur longer than the ovary, clavate, incurved; bracts much shorter than the flowers. *Beck, Bot. p.* 348.

Orchis tridentata. *Willd. Sp.* 4. *p.* 41. *Pers. Syn.* 2. *p.* 506. *Pursh, Am.* 2. *p.* 587. *Bart. Am.* 1. *p.* 52 (Icon, *tab.* 15.). *Torr. Comp. p.* 317. *Florul. Cestr. p.* 93. *Eat. Man. p.* 241.

O. clavellata. *Mx? Am.* 2. *p.* 155. *Ell. Sk.* 2. *p.* 486. Also? *Willd. Sp.* 4. *p.* 10. *Pers. Syn.* 2. *p.* 505. *Pursh, Am.* 2. *p.* 586. var. tridentata. *Muhl. Catal. p.* 80. *Nutt. Gen.* 2. *p.* 189. *Bart. Phil.* 2. *p.* 137.

Three-toothed Habenaria.

Root perennial, a fascicle of thick fleshy fibres. *Stem* 6 to 12 inches high, slender, angular, smooth, with one larger leaf near the base, and 3 or 4 small bract-like ones above, sheathed at base. *Lower leaf* 3 to 5 inches long, and near an inch wide, lance-oblong, or rather oblanceolate, rather acute, smooth, tapering at base, sessile and sheathing,—the *upper leaves* much smaller, linear-lanceolate. *Flowers* few (6 to 12 or 15), small, in an oblong terminal rather compact *spike* 3 fourths of an inch to 2 inches long; *bracts* ovate-lanceolate, about half as long as the ovary. Segments of the *perianth* pale yellowish green, nearly equal, ovate, obtuse, rather shorter than the lip; *lip* cuneate-oblong (lanceolate, *Willd.* ovate-lanceolate, *Beck*), obtuse, with 3 short equal teeth at apex; *spur* longer than the sessile ovary, slender, clavate, curved. *Capsule* small (about 1 third of an inch in length), ovoid-oblong, with a short acumination, smooth.

Hab. Moist thickets, in the Mica-slate: not common. *Fl.* July. *Fr.* Sept.

4. H. ciliaris, *Br.* Lip lance-oblong, pinnately lacerate-ciliate; spur longer than the ovary, filiform; bracts much shorter than the flowers. *Beck, Bot. p.* 348.

Orchis ciliaris, *of the Authors, generally, here cited.*

Ciliate Habenaria.

Root perennial, a fascicle of coarse fleshy fibres, and occasionally of tubers *Stem* 1 to 2 feet high, angular, smooth, leafy, sheathed at base. *Leaves* 3 to 6 inches long, and 3 fourths of an inch to 2 inches wide, lanceolate, acute, or acuminate, nerved, smooth, sessile and sheathing,—usually 2 or 3 larger ones below, and several small bract-like ones above. *Flowers* rather large, deep orange-yellow, spreading, in a thick oblong terminal *spike* 2 to 3 or 4 inches long; *bracts* lanceolate, acuminate, nerved, shorter than the ovary. Outer segments of the *perianth* orbicular-ovate, or obovate, the lateral ones deflected,—the inner lateral ones linear or ligulate, lacerately fringed at apex; *lip* lance-oblong, or elliptic-ovate, nearly twice as long as the perianth-segments, pinnatifid-laciniate, or fringed all round the margin, the segments capillary, and often 2 or 3-cleft; *spur* filiform, longer than the sessile ovary.

Hab. Swamps in the Mica-slate: not common. *Fl.* July—August. *Fr.* Se,

Obs. This handsome species is often abundant in the Mica-slate swamps; bu. is rare elsewhere.

5. H. fissa, *Br.* Lip 3-parted; lobes cuneate, dentate, the middle one bifid; spur longer than the ovary, filiform-clavate, curved. *Beck, Bot. p.* 349.
Orchis fissa. *Willd. Muhl. Pursh*, &c.

Cleft Habenaria.

Root perennial. *Stem* 2 to 3 or 4 feet high, fistular, angular, smooth, leafy *Leaves* 3 to 5 inches long, sessile,—the lower ones oblong-ovate, rather obtuse, the upper ones smaller, bract-like, lanceolate, acute and acuminate. *Flowers* larger purple, in an oblong terminal *spike* 3 to 5 inches long; *bracts* lanceolate, acuminate, shorter than the ovary. Outer segments of the *perianth* obliquely orbicular-ovate, or obovate, the lateral ones deflected, the inner lateral ones obovate-cuneate, entire; *lip* twice as long as the perianth-segments, 3-parted, the lobes spreading, cuneate, irregularly incised-dentate at apex (sometimes nearly entire, or obsoletely dentate?), the intermediate lobe rather the largest, cleft in the middle to one fourth or one third of its length; *spur* somewhat clavate, longer than the sessile ovary.

Hab. Moist grounds; near Pigeon Creek: rare. *Fl.* August. *Fr.*

Obs. Collected at the above locality, on the North side of the County, near the Schuylkill, the present season (1836), by Mr. Joseph Rinehart. It is a rare species, here; and my specimens are rather imperfect.

6. H. fimbriata, *Br.* Lip 3-parted, spreading, scarcely longer than the perianth-segments; lobes nearly equal, fan-shaped, fimbriate; spur longer than the ovary, filiform-clavate, curved. *Beck, Bot. p.* 349.
Orchis fimbriata. *Ait. and the Authors, generally, here cited.*

Fringed Habenaria.

Root perennial, a fascicle of coarse fleshy fibres, and sometimes tapering tubers *Stem* 2 to 3 feet high, stout, fistular, angular, smooth, leafy, sheathed at base. *Leaves* 3 to 6 inches long, and 1 to 2 inches wide, elliptic-lanceolate, acute, nerved, smooth, sessile and sheathing,—usually 3 or 4 larger ones below, and several small bract-like ones above. *Flowers* rather large, bright purple, in a somewhat compact cylindric-oblong terminal *spike* 3 to 5 or 6 inches in length, and an inch to an inch and half in diameter; *bracts* linear-lanceolate, shorter than the flowers. Outer segments of the *perianth* ovate, entire, the inner lateral segments cuneate-

obovate, fimbriate-dentate; *lip* a little longer than the perianth-segments, 3-lobed, spreading, the lobes flat, fan-shaped, nearly equal, fimbriately incised about half way to the base; *spur* filiform-clavate, curved, rather acute at apex, longer than the subsessile ovary.

Hab. Along swampy rivulets: not very common. *Fl.* July—August. *Fr.*

Obs. This is an exceedingly beautiful plant; and though occasionally to be found in various parts of the County, is by no means common.

7. H. GRANDIFLORA, *Torr.* Lip 3-parted, depending, nearly twice as long as the perianth-segments; lobes cuneate, fimbriate, the middle one largest, fan-shaped, with the fimbriæ connivent; spur longer than the ovary, clavate, curved. *Beck, Bot. p.* 349.
Orchis grandiflora. *Bigel. Bost. p.* 321.

LARGE-FLOWERED HABENARIA.

Root perennial. *Stem* about 2 feet high, stout, fistular, angular, smooth, leafy, sheathed at base. *Leaves* 3 to 6 inches long, and 1 to 3 inches wide, smooth, sessile and sheathing, varying in form from lanceolate to elliptic-oblong, the lower one often rather obovate and obtuse,—usually 4 larger ones below and 2 or 3 small ones above. *Flowers* large, pale purple, in a rather open oblong terminal *spike* 3 to 6 inches long, and 2 or 2 and a half inches in diameter; *bracts* linear-lanceolate, longer than the ovary, and often nearly as long as the flowers. Outer segments of the *perianth* elliptic-ovate, entire, the inner lateral segments cuneate-obovate, incised-dentate; *lip* nearly twice as long as the perianth-segments, rather depending, 3-lobed, the lateral lobes cuneate, the middle one larger, more dilated and fan-shaped, all of them fimbriately incised about half way to the base; *spur* clavate, somewhat curved, rather longer than the subsessile ovary.

Hab. Along rivulets; S. Valley-hill: rare. *Fl.* June. *Fr.*

Obs. This is also a superb plant; and allied to the preceding,—though, doubtless, sufficiently distinct. It was collected by D. TOWNSEND, Esq. in 1829, near G. Vernon's, on the South Valley hill.

8. H. PSYCODES, *Spreng.* Lip long, slender, 3-parted, the lobes capillaceous-multifid; outer segments of the perianth ovate; spur as long as the ovary, filiform-clavate, curved; bracts shorter than the flowers. *Beck, Bot. p.* 349.
H. lacera. *Lindl. Ency. p.* 752.
Orchis psycodes. *Willd. Sp.* 4. *p.* 39. *Pers. Syn.* 2. *p.* 502. *Pursh, Am.* 2. *p.* 585. *Nutt. Gen.* 2. *p.* 189. *Bigel. Bost. p.* 319. Not of *Muhl.*
O. lacera. *Mx. Am.* 2. *p.* 156. *Muhl. Catal. p.* 80. *Bart. Phil.* 2. *p.* 137. *Ell. Sk.* 2. *p.* 484. *Florul. Cestr. p.* 93. Also, *Pers. Syn.* 2. *p.* 503. *Pursh, Am.* 2. *p.* 586.

Root perennial, a fascicle of coarse fleshy fibres. *Stem* 18 inches to 2 feet high, angular, smooth, leafy, sheathed at base. *Leaves* about 3 principal ones, and a few small bract-like ones above,—the larger ones 3 to 6 or 8 inches long, and half an inch to an inch and half wide, varying from lance-oblong, to spatulate-oblanceolate, mostly acute, sometimes obtuse, smooth, sessile and sheathing, the smaller ones 1 to 2 inches long, linear-lanceolate, acute. *Flowers* middle sized, rather distant, in a loose oblong terminal *spike* 3 to 5 or 6 inches long; *bracts* lanceolate, about as long as the ovary. Segments of the *perianth* pale green, or greenish white, much shorter than the lip,—the outer lateral ones obliquely ovate, rather

acute, the inner lateral ones linear-oblong, obtuse; *lip* slender, 3-parted,—the lateral lobes capillaceously divided nearly to the base, the middle lobe cuneate, filiform at base, capillaceously fringed at apex; *spur* about as long as the slender sessile ovary, filiform-clavate, rather acute at apex.

Hab. Moist woodlands, and thickets: not very common. *Fl.* June—July. *Fr.*

Obs. This is not a showy species. Some 15 or 18 additional ones are enumerated in the U. States.

§ III. Pollen *cohering in waxy masses, which are definite in number.* Anther *mostly terminal, deciduous.*

407. CORALLORHIZA. *Haller. Nutt. Gen.* 720.
[Greek, *Korallion*, Coral, and *Rhiza*, a root; from its coral-like roots.

Perianth with the segments distinct, nearly equal, mostly connivent. *Lip* produced at base on the under side; the *spur* short and adnate to the ovary. *Column* free. *Pollinia* 4, oblique (not parallel), sub-lenticular. *Plants leafless; root coral-like; scape sheathed; flowers in a terminal raceme.*

1. C. VERNA, *Nutt.* Lip oblong, without spots, bidentate at base, the apex recurved and ovate; spur obsolete, adnate; capsule elliptic-obovoid. *Beck, Bot. p.* 345. Icon, *Journ. Acad. Nat. Sc. Philad. 3. tab.* 7.

VERNAL CORALLORHIZA.

Root perennial, coraloid, or branching with tooth-like processes. *Leaves* none. *Scape* 6 to 12 inches high, embraced by 3 or 4 membranous sheaths, smooth, tawny, inclining to dark purple above. *Flowers* rather small, mostly few (5 to 10 or 12) and distant, in a terminal *raceme; bracts* very small, acute. Segments of the *perianth* of a dingy purple, lance-linear, the outer ones spreading; *lip* nearly white, mostly without spots, oblong-oval, with 2 ridges on the palate, and a small incised tooth on each margin near the base; *spur* nearly obsolete, adnate to the pedicellate ovary. *Capsule* obovoid-oblong, finally reflexed.

Hab. Rich, moist woodlands: not very common. *Fl.* May. *Fr.*

Obs. Collected at Black Rock, by D. Townsend, Esq. in 1831; and subsequently in East Goshen, by Mr. George W. Hall.

2. C. ODONTORHIZA, *Nutt.* Lip oval, or obovate, crenulate, spotted; spur obsolete, adnate; capsule subglobose. *Beck, Bot. p.* 345.
Ophrys corallorhiza. *Mx. Am.* 2. *p.* 158.
Cymbidium odontorhizon. *Willd. Sp.* 4. *p.* 110. *Pers. Syn.* 2. *p.* 517. *Muhl? Catal. p.* 81. *Pursh, Am.* 2. *p.* 593.

TOOTH-ROOTED CORALLORHIZA. *Vulgò*—Coral-root.

Root perennial, coraloid. *Leaves* none. *Scape* 4 to 8 or 10 inches high, rather slender, embraced by 2 or 3 membranous sheaths, smooth, tawny. *Flowers* 10 to 15, small, somewhat pendulous, in a terminal *raceme; bracts* very small, subulate. Segments of the *perianth* brownish, or purplish tawny, lanceolate, connivent *lip* dilated, obovate, obtuse, crenulate, white, spotted with purple; *spur* obsolete. *Capsule* subglobose, or roundish-oval, smooth, rather small, nodding on a short pedicel.

Hab. Woodlands, about roots of trees: frequent. *Fl.* August—Sept. *Fr.* Octo.

3. C. MULTIFLORA, *Nutt.* Scape many-flowered; lip spotted, cuneate-oval, trifid, the middle lobe broad, recurved, the lateral lobes short and tooth-like; spur conspicuous, adnate; capsule elliptic-obovoid. *Beck, Bot. p.* 345. Icon, *Journ. Acad. Nat. Sc. Philad. 3. tab.* 7. C. innata. *Nutt. Gen. 2. p.* 197. *Bart. Phil. 2. p.* 143. *Ell. Sk. 2. p.* 504. Not of *Br.*

MANY-FLOWERED CORALLORHIZA.

Root perennial, coraloid. *Leaves* none. *Scape* 9 to 15 inches high, rather stout, embraced by 2 or 3 membranous oblong sheaths, smooth, purplish tawny. *Flowers* larger than in either of the preceding, and more numerous (15 to 30), in a terminal *raceme; bracts* small, often broad and very obtuse. Segments of the *perianth* purplish brown, connivent, the outer ones linear-lanceolate, rather obtuse; *lip* whitish, tinged with purple, and spotted, cuneate-oval, trifid, or with a small tooth-like lobe on each side; *spur* rather conspicuous, tawny, adnate to the ovary. *Capsule* elliptic-obovoid, rather large, smooth, pedicellate, reflexed.

Hab. Woodlands, about roots of trees: frequent. *Fl.* July—Sept. *Fr.* Octo.

Obs. Collected in 1829, by Mr. GEO. W. HALL. There are no other species known in the U. States.

408. APLECTRUM. *Nutt. Gen. 2. p.* 197.

[Greek, *a*, privative, and *Plektron*, a spur; the lip not being spurred.]

Perianth with the segments distinct, nearly equal, connivent. *Lip* unguiculate, not produced at base. *Column* free; *anther* situated a little below the summit. *Pollinia* 4, oblique, lenticular.

1. A. HYEMALE, *Nutt.* Leaf solitary, radical, petiolate, elliptic, striate-nerved; lip obtuse, 3-lobed, the central lobe rounded, crenulate, the palate ridged. *Beck, Bot. p.* 346.
Cymbidium hyemale. *Willd. Sp. 4. p.* 107. *Pers. Syn. 2. p.* 516. *Muhl. Catal. p.* 81. *Pursh, Am. 2. p.* 593.
Corallorhiza hyemalis. *Bart. Phil. 2. p.* 144. *Ell. Sk. 2. p.* 505. *Bart. Am. 2. p.* 46 (Icon, *tab.* 52.). *Florul. Cestr. p.* 95.

WINTER APLECTRUM. *Vulgò*—Adam & Eve. Putty-root.

Root perennial, coarsely fibrous, bearing subglobose *tubers* half an inch to an inch or more in diameter, which are propagated laterally and are generally found in pairs (sometimes 4 or 5), connected by a coarse fleshy horizontal fibre. *Leaf* solitary (in pairs, *Willd. Pursh*), 3 to 6 inches long, and an inch and half to 3 inches wide, elliptic, or lance-oval, acute at each end, sub-plicate, striate with numerous whitish nerves (which converge at each end like those of *Veratrum viride*), smooth; *petiole* 2 to 3 inches long, inserted on the tuber a little remote from the scape. *Scape* 9 to 15 inches high, terete, smooth, purplish, invested with about 3 striate loose membranaceous *sheaths*, the lowest one proceeding from the tuber. *Flowers* a dingy greenish brown, with strong tinges of dark purple, subsessile, in a terminal bracteate *raceme*, erect,—the *fruit* reflexed, or pendulous; *bracts* linear-lanceolate, small. Segments of the *perianth* linear-lanceolate, or oblong. *Lip* nearly as long as the perianth-segments, dilated near the apex, unguiculate. *Column* shorter than the lip, slightly curved; *pollinia* 4, waxy, lenticular. *Capsule* ovoid-oblong, large, smooth.

Hab. Rich woodlands: not very common. *Fl.* May—June. *Fr.* Octo.

Obs. The arid silvery-nerved *leaf* lives through the winter. It appears to be constantly *solitary;* and I cannot comprehend how *Willdenow* and *Pursh* came

to describe it as being *in pairs*. The *tubers* contain a viscid gum, which, according to *Pursh*, affords a strong cement for broken china, or glass; but I believe he is mistaken in that fact, also. It is the only species of the genus; and, in its inflorescence, has much resemblance to *Corallorhiza*.

409. LIPARIS. *Rich. Lindl. Ency. p.* 751.

[Supposed from the Gr. *Liparos*, fat, or unctuous; from its smooth shining leaves.]

Perianth with the segments distinct, spreading, or deflected, sublinear, narrow. *Lip* flat, dilated, entire, turned various ways. *Column* winged. *Pollinia* 4, parallell, without pedicels or glands.

1. L. LILIIFOLIA, *Rich.* Leaves ovate, shorter than the scape; inner lateral segments of the perianth filiform, deflected; lip broad, obovate-cuneate, mucronate. *Beck, Bot. p.* 350.
Malaxis liliifolia, *of the Authors, generally, here cited.*

LILY-LEAVED LIPARIS. *Vulgò*—Tway-blade.

Root perennial, fibrous and fasciculate, bearing an ovoid bulb at the base of the scape. *Leaves* 2, radical, opposite, rather spreading, 2 to 4 inches long, and 1 to 3 inches wide, varying from lance-ovate to elliptic, and orbicular-ovate, mostly acute, slightly nerved, very smooth, yellowish-green, shining, membranaceous and diaphanous when dried, narrowed at base, subsessile, loosely sheathing the base of the scape, and embraced below by a sheathing membrane, or rudiment of a third leaf. *Scape* 3 to 6 inches high, angular, smooth, the angles often membranaceously margined. *Flowers* rather large, and spreading, in a loose oblong terminal *raceme; bracts* small, lanceolate, membranaceous. Segments of the *perianth* pale straw-color, or ochroleucous, narrow, sublinear, the 2 inner lateral ones filiform, deflected; *lip* generally purplish, as long as the perianth-segments, broad-cuneate, with a very short abrupt acumination; *ovary* slender, clavate, angular, and, with the pedicel, often purple. *Capsule* about 3 fourths of an inch long, erect, angular, oblong, or somewhat tapering below to an angular clavate *pedicel* about as long as the capsule.

Hab. Moist woodlands: frequent. *Fl.* June. *Fr.* September.

2. L. CORREANA, *Spreng.* Leaves lance-oblong, as long as the scape; segments of the perianth involute on the margin, spreading; lip oblong, channelled, cordately recurved at apex. *Beck, Bot. p.* 350.
Malaxis Correana. *Nutt. Gen. 2. p.* 196.
M. longifolia. *Bart. Phil. 2. p.* 142. *Bart. Am. 3. p.* 12 (ICON, *tab.* 75.). *Eat. Man. p.* 219.

CORREA'S LIPARIS.

Root perennial, fibrous and fasciculate, bearing a bulb at the base of the scape. *Leaves* 2, radical, opposite, rather erect, 3 to 6 inches long, and 1 to 2 inches wide, lance-oblong, or elliptic-lanceolate, acute, smooth, yellowish-green, narrowed at base to a margined sheathing *petiole* 1 to 2 inches in length,—the base, or petioles, embraced by a membranous sheath. *Scape* 3 to 6 inches high, smooth, sulcate-angled, the angles often membranaceously margined. *Flowers* rather small, erect, or almost appressed, in a terminal *raceme; bracts* small, lance-ovate, membranaceous. Segments of the *perianth* pale yellowish-green,—the outer ones lance-linear, or linear-oblong, with the margins folded in, the inner lateral ones very narrow, linear, spreading; *lip* pale yellowish-green, shorter than the perianth-segments, oblong; *ovary* clavate, yellowish-green. *Capsule* about half an

inch long, elliptic-oblong, erect, or appressed, on an angular clavate *pedicel* about half the length of the capsule.

Hab. Moist meadows; E. Goshen: rare. *Fl.* June. *Fr.* September.

Obs. This was first collected in 1833, by Mr. Geo. W. Hall, in a meadow near the Gen. Greene Tavern, in East Goshen,—the only locality yet known in this County. There are no other species known in the U. States.

410. MICROSTYLIS. *Nutt. Gen.* 2. *p.* 196.

[Greek, *Mikros*, little, and *Stylos*, a column; from its slender column.]

Perianth with the segments distinct, 1 of them deflected, the 2 inner lateral ones filiform. *Lip* sessile, concave, erect, the summit truncate and bidentate. *Column* minute. *Pollinia* 3, or 4, loose.

1. M. ophioglossoides, *Nutt.* Scape 1-leaved; leaf ovate, amplexicaul. *Beck, Bot. p.* 351.
Malaxis unifolia. *Mx. Am.* 2. *p.* 157. *Bigel. Bost. p.* 324.
M. ophioglossoides. *Willd. Sp.* 4. *p.* 90. *Pers. Syn.* 2. *p.* 514. *Muhl. Catal. p.* 81. *Pursh, Am.* 2. *p.* 592. *Bart. Phil.* 2. *p.* 143. *Ell. Sk.* 2. *p.* 503. *Bart. Am.* 3. *p.* 61 (Icon, *tab.* 92. *f.* 2.). *Torr. Comp. p.* 322.

Ophioglossum-like Microstylis. *Vulgò*—Adder's tongue.

Plant yellowish-green. *Root* perennial, fibrous and fasciculate, bearing a bulb, or tuber, at the base of the scape. *Scape* 3 or 4 to 9 inches high, angular, smooth, with a sheath at base, and bearing a solitary leaf near the middle. *Leaf* 1 to 2 or 2 and a half inches long, and 2 thirds of an inch to 2 inches wide, ovate, mostly rather acute, smooth, sessile and sheathing, or amplexicaul. *Flowers* pale green, or greenish-white, small, in an oblong obtuse terminal *raceme* 1 to 2 inches in length, many of the flowers abortive; *pedicels* very slender, 1 fourth to half an inch long, spreading, rather crowded at summit, the lower ones distant; *bracts* small, lance-ovate, acute, membranaceous. Segments of the *perianth* minute, one of them deflected, and involute on the margin; *lip* erect, cleft at summit, with a tooth in the division. *Capsule* about 1 fourth of an inch long, sub-turbinate, or obovoid-oblong, on a slightly clavate angular pedicel.

Hab. Moist low grounds, and thickets: not very common. *Fl.* July. *Fr.* Octo.

Obs. The only known species of the genus.

Order 2. Diandria.

§ IV. Lateral anthers *perfect, the intermediate one abortive, petaloid.*

411. CYPRIPEDIUM. *L. Nutt. Gen.* 722.

[Gr. *Kypris*, Venus, and *Podion*, a shoe; the inflated lip resembling a slipper.]

Perianth with the 2 outer lateral (or lower) segments mostly united nearly to the apex. *Lip* ventricose, or saccate, inflated, obtuse. *Column* terminating in a petaloid appendage.

1. C. pubescens, *Swarz.* Stem leafy; outer segments of the perianth ovate-oblong, acuminate, the inner ones long, lance-linear, contorted; lip shorter than the perianth-segments; appendage of the col-

umn, triangular-oblong, obtuse. *Beck, Bot. p.* 351. Icon, *Bart. Am. 3. tab.* 74.

Pubescent Cypripedium. *Vulgò*—Noah's Ark. Mocasin flower.

Root perennial, with very numerous coarse fibres. *Stem* 1 to near 2 feet high, simple, often flexuose, striate, pubescent, leafy. *Leaves* alternate, 3 to 6 inches long, and 1 to 3 inches wide, varying from elliptic to ovate and elliptic-lanceolate, acuminate, striate-nerved, pubescent, contracted at base, sessile and sheathing. *Flower* mostly solitary and terminal, with a foliaceous *bract* at base, sometimes a second one from the axil of the penultimate leaf. Segments of the *perianth* apparently 4, green, with purple stains,—the 2 outer lateral ones cohering nearly to the apex, and constituting one bifid segment on the lower side of the flower,—the inner lateral segments longer, much narrower, undulate, or spirally curled; *lip* yellow, large (an inch to an inch and half long), inflated and saccate; *petaloid appendage* of the column ovate-oblong, rather obtuse, subcordate or sagittate at base. *Capsule* oblong, tapering at each end, recurved, pubescent, pedunculate.

Hab. Rich, moist woodlands: frequent. *Fl.* May. *Fr.* August.

2. C. acaule, *Ait.* Scape leafless, 1-flowered; radical leaves 2, elliptic-oblong; segments of the perianth oblong-lanceolate; lip longer than the perianth-segments, with a fissure in front; appendage of the column roundish-rhomboid, acuminate, deflected. *Beck, Bot. p.* 352. C. humile. *Willd. Sp. 4. p.* 144. *Pers. Syn. 2. p.* 525. *Pursh, Am. 2. p.* 595. *Ait. Kew. 5. p.* 221. *Nutt. Gen. 2. p.* 199. *Bart. Phil. 2. p.* 145. *Ell. Sk. 2. p.* 509. *Bart. Am. 3. p.* 35 (Icon, *tab.* 83.). *Florul. Cestr. p.* 95. *Lindl. Ency. p.* 766.

Stemless Cypripedium. *Vulgò*—Lady's Slipper.

Root perennial, coarsely fibrous. *Leaves* 2, opposite, near the base of the scape, 3 to 6 inches long, and 1 to 3 or 3 and a half inches wide, varying from oval to elliptic-lanceolate, mostly acute, nerved, pubescent, narrowed at base, sessile and sheathing, at first rather erect, finally spreading. *Scape* 9 to 12 inches high, striate, pubescent, with 2 or 3 membranous sheaths at base, below the leaves. *Flower* solitary, large, terminal, with a foliaceous ovate-lanceolate *bract* at base. Segments of the *perianth* 4 (the outer lateral ones being completely united, and forming one segment on the lower side of the flower), lanceolate, or elliptic-lanceolate, pubescent, yellowish-green, stained and spotted with purple, mostly shorter than the lip; *lip* large (an inch and half to 2 inches long), purple, and veined with deeper purple, inflated, with a longitudinal fissure in front; *petaloid appendage* of the column broad, roundish-rhomboid, acuminate, deflected, keeled on the inside. *Capsule* large (an inch and half long, and 2 thirds of an inch in diameter), elliptic-oblong, somewhat recurved, pubescent.

Hab. Woodlands; Great Valley hills: not very common. *Fl.* May. *Fr.* Aug.

Obs. This occurs frequently on the North Valley hill; but is rare elsewhere, in this County. Four other species, of this singular and handsome genus, are enumerated in the U. States.

Order 3. Hexandria.

412. ARISTOLOCHIA. *L. Nutt. Gen.* 723.

[A Greek name; having reference to the medical virtues of the plant.]

Perianth tubular, ventricose at base, the limb dilated, ligulate, or extended to a lip on the lower side. *Anthers* subsessile, inserted on the

style. *Ovary* inferior; *stigma* subsessile, 6-parted. *Capsule* 6-angled, 6-celled, many-seeded.

Herbaceous, or shrubby: stem erect, or twining; leaves alternate, mostly cordate and entire, rarely 3-lobed; flowers sub-radical, or axillary. *Nat. Ord.* 62. *Lindl.* ARISTOLOCHIÆ.

1. A. SERPENTARIA, *L.* Stem erect, flexuose; leaves cordate-oblong, acuminate; peduncles sub-radical; lip of the perianth lanceolate. *Beck, Bot. p.* 309.

SNAKE-ROOT ARISTOLOCHIA. *Vulgò*—Virginia Snake-root.

Root perennial, of numerous rather coarse fibres. *Stem* herbaceous, 9 to 15 inches high, simple, or branched from the base, erect or somewhat leaning, slender, angular, pubescent, nearly naked, or with small abortive leaves below, leafy above. *Leaves* 2 to 5 inches long, and 3 fourths of an inch to 2 and a half inches wide, lance-oblong, acuminate, entire, cordate at base, sometimes auriculately produced, somewhat pubescent; *petioles* 1 fourth of an inch to near an inch long. *Flowers* rather large, few, at the base of the stem, often concealed under dead leaves, on flexuose bracteate *peduncles* 1 to 2 inches in length; *bracts* small, ovate, alternate. *Perianth* a dull purplish brown, subcoriaceous, pubescent, tubular, ventricose at base, angularly bent, gibbous at the angle, the limb dilated and somewhat 3-lobed. *Capsule* turbinate, or roundish-obovoid, large (half an inch to 3 quarters in length), somewhat succulent, pubescent. *Seeds* of a tawny ash-color, obovoid, somewhat compressed, slightly keeled or ribbed near each margin, tuberculate-dotted, open or concave on one side, with a central ridge in the cavity.

Hab. Rich woodlands: frequent. *Fl.* June. *Fr.* July—August.

Obs. The fibrous root of this is a well known and very valuable aromatic stimulus. I have specimens, collected in Londongrove by WM. JACKSON, Esq. which are more pubescent, with the leaves subhastate-sagittate, or more conspicuously auriculate at base, and which may belong to the A. *sagittata, Muhl.* or A. *hastata, Nuttall;*—though I have some doubts whether they are really more than a *variety*. Two or three additional species are known in the U. States.

Order 4. Polyandria.

413. ASARUM, *L. Nutt. Gen.* 724.

[Said to be from the Gr. *a*, not, & *Seira*, a bandage; not being used in garlands.]

Perianth sub-campanulate, mostly 3-parted, persistent. *Stamens* mostly 12, inserted on the ovary; *anthers* adnate to the middle of the filaments. *Ovary* inferior; *style* short; *stigma* stellate, 6-cleft. *Capsule* 6-celled, many-seeded.

Herbaceous: root creeping; stem very short, often bifoliate, producing a solitary dichotomal flower. *Nat. Ord.* 62. *Lindl.* ARISTOLOCHIÆ.

1. A. CANADENSE, *L.* Leaves a terminal pair, broad-reniform; perianth woolly externally, 3-parted, the segments sublanceolate, mostly reflexed. *Beck, Bot. p.* 309.

CANADIAN ASARUM. *Vulgò*—Wild Ginger. Colt's-foot.

Root perennial, fibrous, thrown out from a creeping fleshy *rhizoma* or subterranean stem. *Stem* scarcely any, or very short, assurgent, terminating in a pair of *leaves* which are 2 to 4 inches long, and 3 to 5 inches wide, reniform, sometimes obtusely pointed, entire, somewhat pubescent, of a glossy velvety-green above, on

hairy *petioles* 4 to 6 or 8 inches long. *Flower* large, solitary, in the fork of the petioles, mostly concealed under dead leaves, on a pubescent *peduncle* an inch to an inch and half in length. *Perianth* a dark purplish-brown, woolly externally, 3-parted to the ovary, the *segments* lanceolate, or lance-oblong, with a slender acumination, the margins mostly revolute, and very often the segments themselves reflexed. *Capsule* ovoid, woolly, crowned with the persistent perianth-segments.

Hab. Rich woodlands: frequent. *Fl.* May. *Fr.* June.

Obs. The fleshy root, or *rhizoma*, is strongly aromatic, and is said to possess medicinal properties. Two or three other species are found in the U. States, in the South.

CLASS XIX. MONOECIA.

Order 1. Monandria.

414. EUPHORBIA. *L. Nutt. Gen.* 773.
[Named after *Euphorbus*, an ancient Greek Physician.]

Flowers naked, in involucrate heads, or clusters. *Involucre* monophyllous, subcampanulate, with 5 petaloid segments, which have externally 5 gland-like teeth, alternating with them. STAMINATE FL. numerous, each consisting of an *anther* with its *filament* articulated in the middle. PISTILLATE FL. solitary, central; *ovary* pedicellate; *styles* 3, bifid. *Capsule* 3-lobed, 3-celled; *cells* 1-seeded, bursting elastically on the back.

Herbaceous, or fruticose: lactescent; leaves mostly simple, opposite and stipular, or alternate and naked, sometimes wanting; flowers axillary, or subumbellate. *Nat. Ord.* 88. *Lindl.* EUPHORBIACEÆ.

† *Leaves opposite.* * *Flowers axillary.*

1. E. HYPERICIFOLIA, *L.* Stem nearly erect, smoothish; branches spreading; leaves oval-oblong, subfalcate, serrate; corymbs terminal; capsules smooth. *Beck, Bot. p.* 312.

HYPERICUM-LEAVED EUPHORBIA. *Vulgò*—Eyebright· Spurge.

Root annual. *Stem* 9 to 18 inches high, rather slender and leaning, with numerous and somewhat dichotomous spreading branches, smoothish, often purple, the branches mostly pubescent on one side. *Leaves* half an inch to an inch or inch and quarter long, and 1 eighth to near half an inch wide, opposite, obliquely ovate-oblong, or subfalcate, rather obtuse, sharply serrate, nearly entire towards the base on the rounded or convex side, more or less pilose with longish fine hairs, 3-nerved, linear-dotted, often stained with blotches along the midrib; *petioles* scarcely a line in length. *Heads* of florets axillary and dichotomal, pedicellate, forming small corymbose clusters at the extremities of the branches; *petaloid segments* of the *involucre* white, or purple edged with white, minute. *Capsule* small, smooth, often tinged with dark purple.

Hab. Pastures; roadsides, &c. frequent. *Fl.* July—Sept. *Fr.* Sept—Octo.

2. E. MACULATA, *L?* Stem prostrate, much branched, hairy; leaves ovate-oblong, serrulate, oblique at base; flowers in lateral and terminal leafy clusters; capsule hairy. *Beck, Bot. p.* 312.
E. depressa. *Ell. Sk. 2. p.* 665. *Florul. Cestr. p.* 102.

Spotted Euphorbia.

Root annual. *Stem* 6 to 12 inches long, much branched from the base, spreading in every direction and lying close to the ground, hairy. *Leaves* 1 fourth to half an inch long, and 1 eighth to 1 fourth of an inch wide, opposite, ovate-oblong, or oval, mostly obtuse, denticulate, or obsoletely serrate, unequal at base, the upper surface somewhat hairy and roughish-dotted, sometimes stained with dark purple spots, paler and more hairy beneath; *petioles* scarcely a line in length, hairy. *Heads* of florets very small, axillary, on short lateral branches, crowded so as to form axillary leafy clusters; *petaloid segments* of the *involucre* very minute, white, or often purple. *Capsule* very small, hairy.

Hab. Cultivated grounds; Indian Corn fields: frequent. *Fl.* July—Sept. *Fr.* Octo.

Obs. There seems to be some confusion between this and the E. *thymifolia*, of American Botanists,—if the plants are really distinct. It appears also, by the description, to be confounded with the preceding species,—from which it is very distinct. The phrase "*erecto-patula*" could never be applied to this species; and I think the leaves of this are not so frequently spotted with purple, as they are in E. *hypericifolia*.

* * *Flowers subumbellate.*

3. E. Lathyris, *L.* Leaves linear-lanceolate, rather acute, very entire, smooth, sessile, quadrifarious; umbel mostly 4-rayed, rays dichotomous. *Beck, Bot. p.* 313.

Vulgò—Molc-tree. Caper Spurge. *Gallicè*—Epurge.

Root biennial. *Stem* 2 to 3 feet high, erect, stout, terete, smooth. *Leaves* 2 to 4 or 5 inches long, and 1 fourth to 3 fourths of an inch wide, opposite and decussate, and consequently pointing in 4 directions, lance-oblong, or linear-lanceolate, mucronate, smooth and subcoriaceous, sessile. *Heads* of florets bracteate, terminal, on dichotomous branches which are verticillate at the summit of the stem, and with a single subsessile head in the centre or bosom of the verticil; *bracts* opposite, ovate, or lance-ovate, acute, mucronate; glands of the *involucre* lunate, 2-horned, the horns dilated and obtuse. *Capsule* large, smooth.

Hab. Gardens, and cultivated lots: frequent. *Fl.* July—Sept. *Fr.* Octo.

Obs. This foreigner has become naturalized about many gardens;—having been introduced under a notion that it protected them from the incursions of *Moles*.

†† *Leaves alternate: flowers subumbellate.*

4. E. corollata, *L.* Leaves oblong, obtuse, smooth; umbel mostly 5-rayed, the rays di- and tri-chotomously subdivided; petaloid segments of the involucre obovate, conspicuous. *Beck, Bot. p.* 313.

Corollate Euphorbia.

Root perennial. *Stem* 1 to 2 or 3 feet high, slender, erect, terete, striate, smooth, or sometimes slightly pilose near the insertions of the leaves. *Leaves* 1 to 2 or 2 and a half inches long, and 1 fourth of an inch to near an inch wide (the longer ones often narrow), alternate on the stem, subverticillate at the base of the umbel, opposite on the rays, varying from ovate-oblong to linear and spatulate-oblong, obtuse, sometimes retuse, smooth, very entire, with a narrow, subcartilaginous, and often somewhat revolute, margin; *petioles* scarcely a line in length. *Heads* of florets terminal [dioicous, *Nutt.*] on a verticil of 5 branches which are 2 or 3

times dichotomous, the terminal subdivision often trichotomous,—the inflorescence, altogether, somewhat corymbose; *bracts*, or leaves at the subdivisions of the branches, small, ovate-oblong, sessile, or subsessile, smooth; *petaloid segments* of the *involucre* milk-white, rather large and quite conspicuous, obovate. *Capsule* rather small, smooth.

Hab. Sandy banks, and fence-rows: frequent. *Fl.* August. *Fr.* Sept—Octo.

Obs. This neat, and rather pretty species, varies considerably in size,—especially in the length and width of the leaves.

5. E. NEMORALIS. Leaves lance-oblong, rather acute, narrowed at base, subsessile, entire, pilose beneath; umbel 5 to 8-rayed, the rays once or twice dichotomous; bracts broad-ovate; petaloid segments of the involucre dilated, subreniform; ovary verrucose.

E. pilosa? *Pursh, Am. 2. p.* 607. *Beck, Bot. p.* 313. *Eat. Man. p.* 143. Not of *Willd. Pers.* &c.

WOOD EUPHORBIA.

Root perennial. *Stem* 2 to 3 feet high, rather stout, erect, smooth, simple, or often with a slender peduncle-like branch from the axils of the leaves. *Leaves* 3 or 4 inches long, and about an inch wide, alternate, lance-oblong, and oblance-olate-oblong, rather acute, sometimes obtuse, more or less tapering towards the base, sessile, or subsessile, very entire, the upper surface smooth, the under surface pale, or subglaucous, sofily (and often sparingly) pilose. *Heads* of florets in a terminal umbel of 5 to 8 rays, or verticillate branches, which are once or twice subdivided,—and also lateral, on slender axillary branches 3 or 4 inches in length; *bracts* opposite, half an inch to near an inch long, and wider than long, broadly ovate, often retuse, or emarginate, sessile, smooth; *petaloid segments* of the *involucre* dilated, subreniform, purplish-brown within; *ovary* verrucose. *Capsule* rather small, slightly and rugosely verrucose, often becoming nearly smooth.

Hab. Moist woodlands: not very common. *Fl.* May—June. *Fr.* July—Aug.

Obs. This plant has been found in several places in the Mica-slate range, in retired shady vallies,—and also in Londongrove—in situations, and under circumstances, which seem to forbid the idea of its having been introduced;—as I supposed might possibly be the case, when I published my Catalogue. *See Florul. Cestr. p.* 103. I have never yet seen any specimen of it from abroad, nor have I met with any Botanist who was acquainted with the plant. If *Pursh* ever saw it, I incline to think he intended his E. *pilosa* for it; but it does not well agree with that species, as figured in *Gmelin's Flora Sibirica*. Mr. *Nuttall* is decidedly of opinion that it is a non-descript; and as I am disposed to concur with him, I submit it, for the present, with the foregoing specific name. It is proper to add, however, that Dr. *Torrey* has some doubts on this point; and remarks that it comes nearer to E. *amygdaloides*, and E. *hyberna*, than to any other species in his collection. Sixteen or eighteen additional species have been enumerated in the U. States;—of which the E. *marginata*, *Pursh*, (a handsome species, with ovate leaves, and bracts variegated with white margins,) is becoming frequent in our gardens.

415. CAULINIA. *Willd. Nutt. Gen.* 726.

[In honor of *F. Cavolini*; a Neapolitan Botanist.]

STAMINATE FL. *Perianth* 0. *Anther* sessile. PISTILLATE FL. *Perianth* 0. *Ovary* elliptic; *style* filiform; *stigma* bifid. *Capsule* 1-seeded.

Herbaceous, submersed aquatics: leaves opposite, or verticillate, simple; flowers axillary. *Nat. Ord.* 258. *Lindl.* FLUVIALES.

1. C. FLEXILIS, *Willd.* Leaves verticillate by sixes, linear, denticulate near the apex, spreading. *Beck, Bot. p.* 384.
Fluvialis flexilis. *Pers. Syn. 2. p.* 530.

FLEXIBLE CAULINIA.

Root annual? *Stem* 6 to 12 or 18 inches long, filiform, jointed, smooth, dichotomously branching, submersed. *Leaves* mostly aggregated or subverticillate in 4's or 6's, sometimes opposite, half an inch to an inch long, very narrow, linear, acutely denticulate on the margin, especially towards the apex, sessile, dilated and sheathing at base. *Flowers* solitary, axillary, sessile. *Ovary* elliptic-oblong; *style* filiform; *stigmas* 2 or 3, simple. *Capsule* membranaceous, 1-celled, 1-seeded. *Seed* large, oblong, shining, pale straw-color.

Hab. Ponds, and sluggish streams: frequent. *Fl.* July—August. *Fr.* Sept.

Obs. Collected in 1835, by Mr. JOSHUA HOOPES. There is one other species in the U. States.

[Callitriche. *Monandria Digynia.*]

[Arum. *Order Polyandria, of this Class.*]

Order 2. Diandria.

[Fraxinus. Lemna. *Diandria Monogynia.*]

[Podostemum. *Diandria Digynia.*]

Order 3. Triandria.

416. TYPHA. *L. Nutt. Gen.* 730.
[Greek, *Typhos*, a bog, or marsh; from its place of growth.]

Florets in a long dense cylindric *spike*, with the staminate ones above. STAMINATE FL. *Perianth* 0. *Stamens* 3 together, united below into 1 filament, inserted on the hairy receptacle. PISTILLATE FL. *Perianth* 0. *Ovary* pedicellate, surrounded at base with hairs resembling a pappus.

Herbaceous aquatics: leaves long and linear; culm without nodes, terminating in a dense cylindric spike, which is more or less interrupted in the middle. *Nat. Ord.* 255. *Lindl.* TYPHACEÆ.

1. T. LATIFOLIA, *L.* Leaves sub-ensiform, nearly flat; staminate and pistillate spikes approximate, or almost continuous. *Beck, Bot. p.* 380.

BROAD-LEAVED TYPHA. *Vulgò*—Cat-tail. Cooper's Reed. Reed-mace. *Gallicè*—Masse d'eau. *Germ.*—Die Rohrkolbe. *Hisp.*—Espadaña.

Root perennial. *Culm* 4 or 5 feet high, simple, terete, striate, smooth, leafy at base. *Leaves* about as long as the culm, and 1 third to 2 thirds of an inch wide, linear-ensiform, tapering at apex, but obtuse, striate-nerved, smooth, sheathing the culm at base. *Flowers* in a dense terminal *spike*,—the *staminate florets* at the summit, in a terete yellowish-brown spike 6 to 8 inches long, and near an inch in diameter, with a membranaceous sheathing deciduous *bract* at base as long as the spike,—the *pistillate florets* immediately below the staminate, in a cylindric greenish-brown spike 4 to 6 inches long, and half an inch to 3 quarters in diameter, sometimes in contact or continuous with the staminate spike, often with a naked space of near half an inch between them. *Pericarps* very minute and numerous, 1-seeded.

Hab. Pools, and swampy springs: frequent. *Fl.* June—July. *Fr.* September.

Obs. The *leaves* of this species are used by the Coopers to secure the joints of casks, &c. from leaking. Dr. *Bigelow* says they are much used, also, in the manufacture of chairs—*sed qu?* Is it not the *culms* of *Scirpus americanus* which are generally used for that purpose? Poor people sometimes collect the fruit, with its hairy involucels, from the mature spikes, for the purpose of filling beds; but it is both unhealthy and unpleasant,—and far inferior to clean oats chaff, or cut straw.

2. T. ANGUSTIFOLIA, *L.* Leaves linear, semicylindric and channeled near the base; staminate and pistillate spikes distant. *Beck, Bot. p.* 380.

NARROW-LEAVED TYPHA. *Vulgò*—Lesser Cat-tail.

Root perennial. *Culm* 3 to 5 feet high, slender, simple, terete, striate, smooth, leafy at base. *Leaves* about as long as the culm, and 1 sixth to 1 third of an inch wide, nearly linear, striate-nerved, smooth, channeled or concavo-convex near the base, sheathing the culm below. *Flowers* as in the preceding,—but the staminate and pistillate spikes much more slender (1 fourth to 1 third of an inch in diameter), and interrupted in the middle by a naked space of 1 to 2 inches between them.

Hab. Ponds, and wet places; near Unionville: rare. *Fl.* June. *Fr.* Aug—Sept.

Obs. Collected in the above locality, by Dr. THOMAS SEAL; but it is much more rare than the preceding. These are the only species known in the U. States; and are common to Europe and America.

417. SPARGANIUM. *L. Nutt. Gen.* 731.

[Greek, *Sparganon*, a fillet, or bandage; from its ribband-like leaves.]

Florets in dense globose *heads*, the staminate ones above. STAMINATE FL. *Perianth* 3 to 6-leaved. PISTILLATE FL. *Perianth* 3 to 6-leaved. *Drupe* turbinate, acuminate, dry, 1 or 2-seeded.

Herbaceous aquatics: stems leafy, often flexuose; leaves alternate, simple; flowers in sessile heads. *Nat. Ord.* 255. *Lindl.* TYPHACEÆ.

1. S. AMERICANUM, *Nutt.* Stem nearly simple; lower leaves equal with or exceeding the stem, the floral ones concave at base, and erect; stigma simple, ovoid-oblong, oblique, scarcely half as long as the style. *Beck, Bot. p.* 380.

S. simplex. *Muhl. Catal. p.* 82. *Pursh, Am.* 1. *p.* 34. *Bart. Phil.* 2. *p.* 149. Not? of *Willd. Pers.* and *Ait.*

AMERICAN SPARGANIUM. *Vulgò*—Bur-reed.

Root perennial. *Stem* 9 to 18 inches high, flexuose, terete, smooth, simple, or often with 2 or 3 short axillary branches at summit. *Leaves* 6 to 24 inches long (mostly overtopping the stem), and 1 quarter to half an inch wide, smooth, thick and cellular, sub-linear, flat towards the apex, a little tapering but obtuse, the lower ones keeled and subtriquetrous-concave at base, the upper ones concave at base. *Heads* of flowers globose, the lower ones axillary, or bracteate at base,—the *staminate* ones 4 or 5 to 9, situated above, sessile, somewhat contiguous in 2's, or 3's,—the *pistillate* ones 2 to 5 (usually 3), yellowish green, larger than the staminate ones (half an inch to 3 quarters in diameter), sessile, except the lowest one which is often pedunculate, or terminal on a short axillary branch. *Perianth* of the florets of 3 to 5 or 6 spatulate-oblong, and sub-linear, scarious leaflets. *Stigma*

simple, conic-oblong, or tapering to the apex, oblique. *Fruit* a small ovoid acuminate suberose 1- (or sometimes 2-) seeded drupe.

Hab. Sluggish rivulets, ditches, &c. frequent. *Fl.* July. *Fr.* Sept.

Obs. This appears to me to be very nearly related to a specimen of S. *simplex*, which I have received from France. I have specimens, also, collected at Wynn's Meadows, in 1834, by Mr. JOSHUA HOOPES, which are allied to this,—but are much smaller and more slender,—apparently intermediate between S. *americanum* and S. *natans*;—and may, possibly, be distinct from both. The *stem* is 4 or 5 to 9 inches high, simple, slender, flexuose at summit; the *leaves* 4 to 12 or 15 inches long, and 2 to 3 lines wide, sublinear, much overtopping the stem; *staminate heads* 2 to 4 or 5; *pistillate heads* 1 to 3, 1 third to half an inch in diameter; *stigma* simple, somewhat tapering, much shorter than the style. I find it in Mr. *Nuttall's* Herbarium, in the Philad. Academy, under the name of S. *angustifolium*; but that name has been appropriated to the *American variety* of S. *natans*,—which seems to me to be a different plant. If ours should prove to be specifically distinct, it might be called S. *pumilum*. Two additional species are enumerated in the U. States.

418. COMPTONIA. *Gærtn. Nutt. Gen.* 735.

[In honor of *Henry Compton*, Bishop of London; who was a collector of Plants.]

STAMINATE FL. *Ament* cylindric, imbricated; *scales* reniform-cordate, acuminate, 1-flowered. *Perianth* 2-parted, shorter than the scale. *Stamens* 3, forked; *anthers* 6. PISTILLATE FL. *Ament* globose; *scales* 1-flowered. *Perianth* 6-parted, much longer than the scale. *Styles* 2. *Nut* ovoid-oblong, 1-celled, valveless.

Shrubby: leaves alternate, stipular, pinnatifid, resembling the partial fronds of a fern. *Nat. Ord.* 86. *Lindl.* MYRICEÆ.

1. C. ASPLENIFOLIA, *Ait.* Leaves linear-lanceolate, irregularly crenate-pinnatifid, subsessile. *Beck, Bot. p.* 324.
Liquidambar asplenifolia. *Marsh. Arbust. p.* 77.

ASPLENIUM-LEAVED COMPTONIA. *Vulgò*—Sweet Fern.

Stem 18 inches to 3 feet high, slender, much branched, young branches pubescent. *Leaves* 1 to 4 inches long, and 1 fourth to 2 thirds of an inch wide, rather acute at each end, irregularly and crenately incised almost to the midrib, pubescent, sprinkled with resinous particles, paler beneath, on a very short petiole; *stipules* lanceolate, acuminate, semi-sagittate, or auriculate, pubescent. *Staminate aments* 3 fourths of an inch to an inch and half long, cylindric, 2 or 3 lines in diameter; *scales* conspicuously acuminate, pubescent, sprinkled with resinous particles. *Pistillate aments* globose, or roundish-ovoid, half an inch to 3 quarters in diameter; divisions of the *perianth* subulate-linear, roughish-pubescent, giving the globose cluster the appearance of a bur. *Nut* oval, or ovoid-oblong, smooth and shining, of a leaden or dingy brown color.

Hab. Dry hills; Mica-slate range: frequent. *Fl.* April. *Fr.* Sept.

Obs. This little shrub is abundant on our dry slaty hills; but rare elsewhere. The bruised leaves emit a strong resinous aromatic odor; and the plant is reputed medicinal. The infusion is a popular remedy in Dysentery. It is the only known species of the genus.

[Scleria. Carex. *Triandria Monogynia.*]

[Zea. Tripsacum. *Triandria Digynia.*]

[Urtica pumila. *Order Tetrandria, of this Class.*]

[Phyllanthus. *Order Monadelphia, of this Class.*]

Order 4. Tetrandria.

419. BOEHMERIA. *Willd. Nutt. Gen.* 740.

[Named after *George Rudolph Boehmer;* a German Botanist.]

Staminate Fl. *Perianth* 4-parted; segments lanceolate, acute. Pistillate Fl. *Perianth* 0; but a cluster of ovate acuminate *scales*, with a compressed *ovary* within each scale; *style* 1, filiform. *Nut* compressed, ovate, margined.

Herbaceous, or frutescent: leaves opposite, or alternate, stipular; flowers clustered. *Nat. Ord.* 78. *Lindl.* Urticeæ.

1. B. cylindrica, *Willd.* Herbaceous; leaves opposite, lance-ovate, acuminate, dentate, smoothish, on long petioles; flowers in simple axillary spikes, often dioicous; staminate spikes interrupted, pistillate ones mostly continuous, cylindrical. *Beck, Bot. p.* 316.

Urtica cylindrica. *Mx. Am.* 2. *p.* 179.
Also, U. procera. *Florul. Cestr. p.* 100. Not of *Willd.* &c.

Cylindrical Boehmeria. *Vulgò*—False Nettle.

Root perennial. *Stem* 18 inches to 3 feet high, mostly simple, obtusely 4-angled, with a groove on each side, smoothish, or slightly pilose. *Leaves* mostly opposite, 2 or 3 to 5 or 6 inches long, and an inch and half to 3 inches wide, varying from ovate to elliptic, or oblong-ovate, acuminate, coarsely serrate-dentate, 3-nerved, smoothish, or sparingly pilose, ciliate-pubescent on the margin; *petioles* 1 to 3 inches long, slender, nerved, somewhat pubescent, with lance-subulate stipules at base. *Flowers* small, greenish, in clusters, on simple axillary *spikes* 1 to 2 or 3 inches in length, often dioicous, and usually with 2 or 3 small *leaves* at the summit of the spikes. *Staminate spikes* slender, and generally longer than the fertile ones, interrupted or with the florets in small distant bracteate clusters; *pistillate spikes* shorter and thicker, continuous or with the clusters crowded so as to cover the rachis;—where the spikes contain both staminate and pistillate florets, they are somewhat interrupted. *Fruit* compressed, ovate, with a thick pubescent margin, and acuminate with the pubescent style.

Hab. Moist thickets; along streams: frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. The plant enumerated in my Catalogue, as B. *lateriflora*, I believe is not distinct from this. The species, of that name, is the only additional one known in the U. States,—and I have not yet met with it in Chester County. The *Urti a procera*, of my Catalogue, I also find to be nothing but the present species of *Boehmeria*.

420. URTICA. *L. Nutt. Gen.* 741.

[Latin, *uro*, to burn, and *tactus*, the touch; from the sensation it produces.]

Flowers sometimes dioicous. Staminate Fl. *Perianth* single, of 4 roundish obtuse leaves, with the cup-shaped rudiment of a pistil in the centre. Pistillate Fl. *Perianth* mostly of 2 persistent leaves. *Stigma* villose. *Nut* compressed, orbicular-ovate, shining.

Herbaceous, or frutescent: often pungently pilose; leaves opposite, or alternate, stipular; flowers axillary, or subterminal, in spikes, clusters, or loose cymose and paniculate racemes. *Nat. Ord.* 78. *Lindl.* Urticeæ.

† *Leaves opposite.*

1. U. PUMILA, *L.* Stem glabrous, succulent and translucent; leaves ovate, acuminate, crenate-serrate, 3-nerved, smoothish; flowers triandrous, in clustered corymbs shorter than the petioles. *Beck, Bot. p.* 314.

DWARF URTICA. *Vulgò*—Rich-weed. Smooth Nettle.

Plant yellowish green. *Root* annual. *Stem* 6 to 18 inches high, simple, or sometimes branched from the base, obtusely 4-angled, fleshy, smooth and shining, nearly transparent. *Leaves* opposite, 1 to 3 inches long, and 3 fourths of an inch to 2 inches wide, more or less ovate, with a short sub-linear entire obtuse acumination, rather obtusely and coarsely serrate, often inclining to rhomboid, with the base cuneate and entire, distinctly 3-nerved, shining and translucent, smoothish, or minutely pilose, the upper surface sprinkled with coarser hairs; *petioles* 1 to 3 inches long, slender, smoothish. *Flowers* small, greenish, in axillary branching clusters, or paniculate corymbs, shorter than the petioles. *Fruit* compressed, ovate, acute, minutely verrucose, or sprinkled with brownish oblong wart-like dots.

Hab. Moist shaded places; about houses, &c. frequent. *Fl.* July—Aug. *Fr.* Sept.

2. U. DIOICA, *L.* Stem and leaves hispid; leaves cordate-lanceolate, conspicuously acuminate, coarsely and acutely serrate; flowers often dioicous, in clustered paniculate spikes longer than the petioles. *Beck, Bot. p.* 314.

DIOICOUS URTICA. *Vulgò*—Nettle. Stinging Nettle.

Gallicè—Grande Ortie. *Germ.*—Die Brennessel. *Hisp.*—Ortiga.

Root perennial. *Stem* 2 to 3 feet high, obtusely 4-angled, branching, very hispid. *Leaves* opposite, 2 or 3 to 5 inches long, and 1 to 2 inches wide, hispid, more or less cordate at base, sharply and strongly serrate, acuminately tapering to the apex, with a lance-linear acute entire point 1 third to 3 fourths of an inch long; *petioles* half an inch to 2 inches long, hirsute, with linear-lanceolate pubescent *stipules* at base. *Flowers* small, often dioicous, in interrupted clusters on slender axillary branching hispid *spikes* longer than the petioles.

Hab. About houses, in waste places: frequent. *Fl.* June-August. *Fr.* Aug-Sept.

Obs. A naturalized foreigner,—well known to all who have ever come in contact with it. When permitted to flourish about houses, it becomes a vile nuisance.

†† *Leaves alternate.*

3. U. CANADENSIS, *L.* Hispid and stinging; leaves ovate, acuminate, serrate; panicles axillary, elongated, loosely and divaricately branched, the lower ones staminate, the upper ones pistillate. *Beck, Bot. p.* 315. *Also*, U. divaricata. *Florul. Cestr. p.* 100. Not? of *Willd.* &c.

CANADIAN URTICA.

Root perennial. *Stem* 2 to 5 or 6 feet high, stout, terete, striate, hispid, branching. *Leaves* alternate, 3 to 6 or 7 inches long, and 2 to 3 or 4 inches wide, ovate, often inclining to elliptic, acuminate, dentate-serrate, thinnish, more or less hispid on both sides; *petioles* 1 to 3 or 4 inches long, slender, hispid. *Flowers* in loose axillary divaricately-branching hispid *panicles* often nearly as long as the leaves, the lower or early ones mostly sterile, the upper or later ones fertile.

Fruit compressed, smooth, obliquely orbicular-ovate, with the *style* deflected along one margin.

Hab. Miry, shaded grounds; along streams: frequent. *Fl.* July—Aug. *Fr.* Sept.

Obs. This species is said to afford a strong fibre, which may be substituted for *Hemp.* The U. *divaricata*, of my Catalogue, I believe to be nothing more than a *variety* of this; and I am not sure the remark may not be made general. I find, also, that what I had formerly taken for U. *procera*, is neither more nor less than *Boehmeria cylindrica!* Four or five additional species are enumerated in the U. States.

421. MORUS. *L. Nutt. Gen.* 743.

[Greek, *Morea*, the Mulberry: or Celtic, *Mor*, black; in allusion to the fruit.]

Flowers in cylindric *spikes*, sometimes dioicous. Staminate Fl. in loose spikes. *Perianth* 4-parted. Pistillate Fl. in dense spikes. *Perianth* 4-parted; segments concave, becoming baccate. *Ovary* superior; *styles* 2. *Nut* small, compressed, ovate, covered by the succulent perianth.

Trees: lactescent; leaves alternate, stipular; flowers in small axillary pedunculate spikes, the pistillate ones becoming baccate. *Nat. Ord.* 80. *Lindl.* Artocarpeæ.

1. M. rubra. *L.* Leaves cordate-ovate, or palmate-lobed, acuminate, serrate, scabrous above, pubescent beneath; flowers sub-dioicous; fruit dark purple. *Beck, Bot. p.* 316. Icon, *Mx. f. Sylva*, 3. *tab.* 116.

Red Morus. *Vulgò*—Red Mulberry.

Stem 10 to 20 or 30 feet high, and 12 to 20 inches in diameter, with numerous spreading branches at summit. *Leaves* 3 to 6 or 7 inches long, and 2 to 4 or 5 inches wide, more or less cordate (on young plants often palmate-lobed, and very scabrous above), dentate-serrate, with an entire acumination, more or less scabrous above, softly and, while young, somewhat hoary-pubescent beneath, especially along the nerves; *petioles* half an inch to an inch and half long, flattish, striate, pubescent, with linear membranaceous pubescent caducous *stipules* at base. *Flowers* greenish, small, numerous, in axillary pedunculate ament-like *spikes*, often dioicous, but not unfrequently the fertile spikes are androgynous. *Staminate spikes* 1 to near 2 inches long, rather loose, on common peduncles half an inch to 3 quarters in length. *Pistillate spikes* more densely flowered, about an inch long, and near half an inch in diameter when mature,—the perianth of the florets becoming thick and fleshy, forming an oblong terete compound berry, which is juicy, dark purple, and pleasantly esculent; common peduncle 1 fourth to half an inch long.

Hab. Rich woodlands; fence-rows, &c. frequent. *Fl.* May. *Fr.* June—July.

Obs. The *wood* of this species is exceedingly durable, and highly valued for making posts, &c. The *leaves* have been successfully used for feeding Silk-worms; but the product is said not to be so fine as that afforded by the White Mulberry. The *fruit* is more admired than that of any other species.

2. M. alba, *L.* Leaves obliquely cordate-ovate, and sub-lobed, acute, or sub-acuminate, serrate, smoothish, shining; fruit mostly whitish. *Beck, Bot. p.* 316.

White Morus. *Vulgò*—White Mulberry.

Gallicè—Murier blanc. *Germ.*—Der Maulbeerbaum. *Hisp.*—Morál.

Stem 10 to 20 feet high, and 6 to 12 or 15 inches in diameter, much branched at summit. *Leaves* 2 to 3 or 4 inches long, and an inch and half to 2, or 2 and a half inches wide, obliquely cordate, and oblong-cordate, rather acute, or with a very short acumination, unequally crenate-serrate, often partially lobed, smoothish, with some pubescence in the axils of the nerves beneath, shining, and yellowish-green; *petioles* half an inch to an inch long, finely pubescent, with lance-linear membranaceous *stipules* at base. *Pistillate spikes* shorter and smaller than in the preceding (1 third to 2 thirds of an inch long), on slender peduncles 1 fourth to half an inch long. *Fruit* pale yellow, or straw-color, when mature,—rarely dark purple.

Hab. Fence-rows; near West Chester: not common. *Fl.* May. *Fr.* June—July.

Obs. This foreign species was introduced here, more than half a century since, with a view to the culture of Silk. The Silk culture was soon abandoned, —but the tree became partially naturalized, and is still to be met with, in several localities, near West Chester. Recently a Silk Company has been organised in this County; and the M. *alba* is now under culture, in several places, to a considerable extent. Another plant, called M. *multicaulis*, has also been introduced for cultivation, during the present year (1836), and is said to be preferable to the M. *alba*. Whether it be more than a *variety* of the *alba*, I have not had an opportunity to ascertain. There are no other species known in the U. States.

422. ALNUS. *Willd. Nutt. Gen.* 737.

[The Latin name for the Alder.]

Staminate Fl. *Ament* long, cylindric; *scales* cuneate, truncate, 3-lobed, 3-flowered. *Perianth* 4-parted. Pistillate Fl. *Ament* ovoid-oblong; *scales* sub-trifid, 2-flowered. *Perianth* 0. *Styles* 2. *Nut* compressed, not margined.

Shrubs: leaves alternate, stipular; flowers in axillary sub-fasciculate aments. *Nat. Ord.* 83. *Lindl.* Betulineæ.

I. A. serrulata, *Willd.* Leaves obovate, sub-acuminate, doubly serrulate; stipules oval, obtuse. *Beck, Bot. p.* 326. Icon, *Mx. f. Sylva*, 2. *tab.* 75. *f.* 1.
Betula-Alnus rubra. *Marsh. Arbust. p.* 20.
B. serrulata. *Mx. Am.* 2. *p.* 181.

Serrulate Alnus. *Vulgò*—Common Alder. Candle Alder.

Stem 6 to 10 or 12 feet high, and half an inch to 1 or 2 inches in diameter, with numerous crooked and rather rigid branches. *Leaves* 2 to 4 inches long, and 1 to 3 inches wide, generally more or less obovate, sometimes oval, with a very short abrupt acumination, or often obtuse, doubly denticulate-serrate, strongly nerved, sub-plicate, thick and subcoriaceous, smooth, green above, paler beneath, with the nerves and their axils pubescent, often ferruginous; *petioles* one third to half an inch long; *stipules* oval, or ovate-oblong, mostly obtuse, smooth, caducous; *Staminate aments* an inch and half to 2 and a half inches long, slender, flaccid, pendulous, and sub-fasciculate near the ends of the branches, reddish-brown with the anthers yellow, deciduous. *Pistillate aments* half an inch to 3 quarters in length, thick, rigid, oblong, or ovoid-oblong, dark purplish-brown, persistent,—usually 3 or 4, alternate and approximate, often somewhat clustered, on short lateral branches below the staminate ones,—when in flower, bristled with the dark-purple exsert styles.

Hab. Banks of rivulets, and swamps: common. *Fl.* March—April. *Fr.* Octo.

Obs. This is a shrub of little or no value,—and is often rather troublesome along swampy rivulets, in meadows, &c. Two other species are enumerated in the U. States.

[Parietaria. *Tetrandria Monogynia.*]

Order 5. Pentandria.

423. AMARANTHUS. *L.*

[Gr. *a*, not, *maraino*, to fade, & *Anthos*, a flower; alluding to the unchanging flowers.]

STAMINATE FL. *Perianth* deeply 3 or 5-parted, mostly colored, persistent, the segments lanceolate, acute. *Stamens* 3, or 5. PISTILLATE FL. *Perianth* as in the staminate. *Styles* 2 or 3. *Capsule* 1-celled, circumscissed. *Seed* 1.

Herbaceous: leaves alternate; flowers mostly in clusters, axillary and terminal. *Nat. Ord.* 151. *Lindl.* AMARANTACEÆ.

1. A. ALBUS? *L.* Stem obtusely angular, smooth, much branched; leaves obovate, and spatulate-oblong, retuse, setaceously mucronate; flowers triandrous, in small axillary clusters. *Willd. Sp.* 4. *p.* 382.

WHITE AMARANTHUS.

Root annual. *Stem* 1 to 2 or 3 feet high, rather stout, obtusely angular, smooth, pale green, or whitish, generally much branched (simple, *Willd.*), the principal branches spreading, or open. *Leaves* half an inch to an inch and half long, and 1 eighth to 3 fourths of an inch wide, varying from oblong to spatulate-ovate, and obovate, naked, minutely roughish-dotted, entire, emarginate, with a bristle in the sinus terminating the midrib, narrowed at base to a slender *petiole* 1 fourth of an inch to an inch and half long,—the leaves on the branches small, linear-elliptic, or oblong, obtuse, setaceously mucronate. *Flowers* pale green, inconspicuous, in small axillary bracteate clusters; *bracts* lance-subulate, spinescently acuminate, longer than the flowers. *Seed* small, orbicular, somewhat compressed, with a narrow margin, smooth and shining, dark purple.

Hab. Barnyards, and cultivated grounds: frequent. *Fl.* August. *Fr.* Sept.

Obs. I have always supposed this to be the A. *albus*, and Mr. *Nuttall* so considers it,—but it agrees better with the description of A. *græcizans;* which, however, *Willdenow* says is very nearly allied to A. *albus*. It is given, in the books, as a native of Pennsylvania; and yet, to me, it has much the appearance of a naturalized weed. Doctors *Torrey* and *Beck* take no notice of it.

2. A. HYBRIDUS, *L.* Stem sulcate-angled, roughish-pubescent, sparingly branched; leaves ovate, and lance-ovate; flowers pentandrous, in dense compound axillary and terminal spikes. *Beck, Bot. p.* 294.

HYBRID AMARANTHUS.

Root annual. *Stem* 2 to 4 or 5 feet high, stout, sulcate-angled, somewhat hairy, and branched, often nearly simple. *Leaves* 2 or 3 to 5 inches long, and 1 to 3 inches wide, ovate, or lance-ovate, naked, roughish-dotted, entire, tapering to the apex, but the point mostly obtuse, emarginate, and setaceously mucronate, abruptly narrowed at base to a *petiole* 1 to 3 inches in length. *Flowers* small, green, sometimes becoming purplish, the staminate and pistillate ones intermingled, and densely clustered in ovoid-oblong compound sessile crowded *spikes*, axillary and terminal, the terminal spike elongated and sub-cylindric; *bracts* subulate, with a

slender sharp acumination, longer than the flowers. *Seed* resembling that of the preceding, nearly black.

Hab. Gardens, and cultivated lots: common. *Fl.* August. *Fr.* Octo.

Obs. A homely weed, and rather troublesome about our gardens. It is also said to be a native; but I am not quite satisfied of the fact.

3. A. SPINOSUS, *L.* Stem striate, smoothish, much branched; leaves ovate-lanceolate; axils spinose; flowers pentandrous, in compound terminal and axillary spikes. *Beck, Bot. p.* 294.

THORNY AMARANTHUS.

Root annual. *Stem* 18 inches to 2 or 3 feet high, angular-striate, smoothish, often purple, generally much branched and bushy. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, ovate-lanceolate, rather obtuse, mucronate, entire, naked, minutely roughish-dotted, with glaucous blotches beneath; *petioles* about as long as the leaves, with 2 subulate spinose *stipules* at base 1 fourth to half an inch in length. *Flowers* small, clustered in oblong terete erect terminal and subterminal spikes.

Hab. Cultivated lots, near West Chester: not common. *Fl.* August. *Fr.* Octo.

Obs. This is undoubtedly an introduced plant: and a vile nuisance it is, wherever it prevails. It is abundant in the unimproved streets and alleys, of Philadelphia; but is yet rare in Chester County. It was collected near West Chester in 1829, by D. TOWNSEND, Esq. Six or eight additional species are enumerated in the U. States.

[Coltis. *Pentandria Digynia.*]

[Xanthium. Ambrosia. *Syngenesia Senecionideæ.*]

Order 6. Hexandria.

[Zizania. *Triandria Digynia.*]

[Melanthium. Veratrum. *Hexandria Trigynia.*]

Order 7. Polyandria.

424. CERATOPHYLLUM. *L. Nutt. Gen.* 748.

[Gr. *Keras*, a horn, and *Phyllon*, a leaf; the dichotomous leaves resembling horns.]

STAMINATE FL. *Perianth* 8 to 10-parted; segments subulate, equal. *Stamens* 16 to 20, very short. PISTILLATE FL. *Perianth* as in the staminate flower. *Ovary* superior; *stigma* filiform, oblique, sessile. *Nut* 1-celled, 1-seeded, indehiscent.

Herbaceous, submersed aquatics: leaves verticillate, very narrow, dichotomously divided; flowers axillary, solitary. *Nat. Ord.* 165. *Lindl.* CERATOPHYLLEÆ.

1. C. DEMERSUM, *L.* Leaves deeply and often doubly dichotomous; fruit armed with 3 spines. *Beck, Bot. p.* 124.

DEMERSED CERATOPHYLLUM. *Vulgò*—Horn-wort.

Plant deep green. *Root* perennial? *Stem* 6 to 12 or 18 inches long, filiform, branching, smooth, procumbent, or floating, under water. *Leaves* in numerous verticils of 6 or 8, half an inch to near an inch long, fistular or cellular near the base, once or twice dichotomous, the segments linear, capillary, finely aculeate-denticulate, and mostly with 2 minute aculeate teeth at apex. *Flowers* axillary, solitary, sessile, inconspicuous. *Fruit* oblong, with a longish terminal spine,

formed of the indurated stigma, and 2 (sometimes more ?) shorter divaricate ones towards the base.

Hab. Brandywine, Schuylkill, & their tributaries: frequent. *Fl.* June, July. *Fr.* Aug.

Obs. Collected by Mr. Joshua Hoopes, in 1828. There is another species enumerated in the U. States, by Messrs. *Nuttall* and *Eaton;* but I do not find it mentioned by any other American Botanist.

425. SAGITTARIA. *L. Nutt. Gen.* 750.

[Latin, *Sagitta*, an arrow; from the prevailing form of the leaves.]

Staminate Fl. *Perianth* deeply 6-parted, the 3 outer segments sepaloid, persistent, the 3 inner ones petaloid, deciduous. Pistillate Fl. *Perianth* as in the staminate flower. *Ovaries* superior, numerous, collected in a globose head. *Carpels* compressed, margined, 1-seeded, not opening.

Herbaceous aquatics: leaves radical, mostly sagittate; flowers verticillate in threes near the summit of the scape, the staminate ones above. *Nat. Ord.* 229. *Lindl.* Alismaceæ.

1. S. sagittifolia, *L.* var. *latifolia*, *Muhl.* Smooth; leaves broad-ovate, mostly acute; scape simple; braets ovate-lanceolate, acuminate. *Beck, Bot. p.* 377.
S. sagittifolia. *Mx. Am.* 2. *p.* 189. *Pursh ? Am.* 2. *p.* 395. *Bigel. Bost. p.* 344. *Florul. Cestr. p.* 102.
S. latifolia. *Willd. Sp.* 4. *p.* 409. *Pers. Syn.* 2. *p.* 563. Not ? of *Pursh.*

Arrow-leaved Sagittaria. *Vulgò*—Arrow-head.

Root perennial, bearing large oval fleshy *tubers* 1 to 2 or 3 inches in diameter. *Leaves* all radical, 3 or 4 to 10 or 12 inches long (including the lobes), and 1 or 2 to 6 inches wide, more or less ovate, mostly acute, sometimes obtuse, or with a very short abrupt acumination, nearly or quite smooth, entire, with a minute denticulate roughness on the margin, sagittate-lobed at base, the lobes about as long as the body of the leaf, and nearly half as wide, ovate-lanceolate, more or less acuminate, somewhat diverging, the inner margin curved or convex; *petioles* 4 to 12 or 15 inches long, rather stout, tapering upwards, smooth. *Scape* 9 to 18 inches high, simple, smooth. *Flowers* in numerous pedicellate bracteate verticils of 3, the staminate ones above; *pedicels* 1 fourth to half an inch long; *bracts* membranaceous, smooth, varying from lance-ovate with a long slender acumination, to linear-lanceolate and acute. Inner segments of the *perianth* (or *petals*) white, orbicular, thin and deciduous. *Fertile* flowers with the ovaries in depressed-globose *heads*,—when in fruit 1 half to 2 thirds of an inch in diameter.

Var. d. *pubescens*, *Torr.* Pubescent; leaves ovate, rather acute; bracts roundish ovate. *Beck, l. c.*
S. pubescens. *Muhl. Catal. p.* 86. *Nutt. Gen.* 2. *p.* 213. *Ell. Sk.* 2. *p.* 590. *Florul. Cestr. p.* 102. *Eat. Man. p.* 316.
S. latifolia. *Pursh ? Am.* 2. *p.* 396.

Generally smaller than the preceding variety, with the leaves, scape, pedicels and perianth pubescent,—the pedicels longer and more slender (the lower ones about an inch long).

Hab. Ditches, and swampy springs: frequent. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. This plant presents so many *varieties*, that it is difficult to determine which are species, D. Townsend, Esq. has collected one, in this vicinity, with

large smoothish leaves which are very obtuse or rounded at apex, the flowers dioicous, on rather stout pubescent pedicels half an inch to an inch long, and the bracts and perianth pubescent, resembling those of the *var. pubescens*. It seems to be the S. *obtusa*, of Authors; and yet it may, perhaps, be doubted whether it be any thing more than another variety of the present species.

2. S. HETEROPHYLLA, *Pursh.* Leaves smooth, generally elliptic, acute at each end, some of them sagittate, with the lobes linear and divaricate; scape simple, few-flowered, the pistillate flowers subsessile; bracts oval, obtuse. *Beck, Bot. p.* 377.

VARIOUS-LEAVED SAGITTARIA.

Root perennial, of numerous coarse fibres. *Leaves* 2 to 3 inches long, and an inch to an inch and half wide, generally elliptic and entire, but some of them occasionally sagittate, smooth, on *petioles* 6 to 12 or 15 inches long. *Scape* 9 to 12 inches high, simple, smooth. *Flowers* in 2 or 3 verticils of 3, the pistillate ones, or those in the lower verticil, subsessile, the staminate ones on *pedicels* 1 fourth to half an inch long; *bracts* small, oval, or elliptic-ovate, smooth. *Perianth* smooth, the inner segments white, petaloid.

Hab. Margin of the Schuylkill, at Black rock: rare. *Fl.* August. *Fr.* Octo.

Obs. Collected in the above locality, by D. TOWNSEND, Esq. in 1830. It is rare in this County,—but quite frequent, lower down the Schuylkill, towards the tide. Eight or ten additional species are enumerated in the U. States; but the whole genus is so polymorphous, that it is not easy to say how many of them are genuine species.

426. ARUM. *L. Nutt. Gen.* 762.

[An ancient name, of obscure etymology.]

Spathe cucullate, convolute at base. *Spadix* naked at summit, *staminate* in the middle, and *pistillate* at base (often *dioicous*). *Perianth* 0. *Berry* 1-celled, many-seeded.

Herbaceous: often stemless; leaves pseudo-compound, or simple; flowers naked, on a spadix. *Nat. Ord.* 256. *Lindl.* AROIDEÆ.

1. A. DRACONTIUM, *L.* Leaf mostly solitary, pedate; leaflets lance-oblong; spadix subulate, longer than the oblong convolute spathe. *Beck, Bot. p.* 381.

DRAGON ARUM. *Vulgò*—Green Dragon. Dragon Root.

Root perennial, tuberous. *Stem* 0. *Leaf* 1, radical, pedately dissected,—or the petiole dichotomous at summit, the branches divaricate, each bearing 3 to 5 or 6 leaflets, or segments, and always a dichotomal one in the centre or division of the petiole; *leaflets* 3 to 6 or 8 inches long, and 1 to 2 or sometimes near 3 inches wide, lance-oblong, acuminate, entire, sessile or subsessile, smooth, and, when dry, very thin and membranaceous; *common petiole* 12 to 18 inches long, the lower half embracing the scape, and invested by a loose membranaceous sheath at base. *Scape* 6 to 12 inches long, rather slender; *spathe* 1 to 2 inches long, convolute or rolled into a tube, with a short erect acumination; *spadix* mostly dioicous, bearing numerous sessile stamens, or pistils, around its base, within the spathe, and with the summit 2 to 4 inches in length, exserted, slender and tapering to an acute point. *Berries* in an ovoid cluster round the base of the spadix, smooth, reddish-orange when mature.

Hab. Low grounds; along Brandywine, &c. frequent. *Fl.* May—June. *Fr.* Sept.

Obs. As far as I have observed, the flowers are generally dioicous, both in this and the following species.

2. A. TRIPHYLLUM, *L.* Leaves mostly in pairs, ternate; leaflets elliptic-ovate; spadix clavate, shorter than the spathe. *Beck, Bot. p.* 381.

THREE-LEAVED ARUM. *Vulgò*—Indian Turnep. Wake-robin.

Root perennial, fibrous, with an orbicular depressed rugose *tuber*, at the base of the petioles, 1 to 2 or 3 inches in horizontal diameter. *Stem* 0. *Leaves* mostly 2 (sometimes solitary), ternate; *leaflets* 2 or 3 to 6 or 8 inches long, and 1 to 4 or 5 inches wide, varying from ovate to subrhomboid and elliptic-lanceolate, acuminate, entire, acute at base, sessile, smooth, green (sometimes purple), paler and glaucous beneath, thin and membranaceous when dried; *common petioles* 9 to 18 inches long, smooth, clasping below, and invested by one or two loose thin membranaceous sheaths at base. *Scape* 6 to 12 or 15 inches high, the base inclosed in the sheathing petioles: *spathe* 3 to 5 inches long, the lower half convolute, the upper half a little dilated, flat, ovate-lanceolate, acuminate, and cucullately incurved, smooth, green, dark purple, or whitish, spotted, or often variegated with dark purple and yellowish or ochroleucous stripes; *spadix* mostly dioicous, bearing numerous sessile stamens, or pistils, around its base, within the spathe,—the summit clavate, obtuse, much shorter than the spathe, but a little exserted from the convolute portion. *Berries* numerous, in a large ovoid-oblong cluster round the baseof the spadix, smooth, orange-red, or scarlet, when mature.

Hab. Rich, shaded grounds; fence-rows, &c. frequent. *Fl.* May. *Fr.* Aug—Sept.

Obs. I have occasionally seen the leaves of this, instead of being triphyllous, divided into two pairs of large leaflets,—one pair immediately above the other. The *tuber* (which is a sort of *subterranean stem*, called a *cormus*), is extremely acrid; but that quality is dissipated by boiling, or drying. A kind of *Sago* has been obtained from it; and the grated tuber, boiled in milk, is a popular medicine in coughs, and pulmonary consumption. One or two additional species are enumerated in the U. States.

427. RENSSELAERIA. *Beck, Bot. p.* 382.

[In honor of *S. Van Rensselaer*, of N. Y.; a munificent Patron of Natural Science.]

Spathe convolute. *Spadix* covered with flowers, the *stamens* above, *pistils* at the base. *Perianth* 0. *Berry* 1-seeded.

Herbaceous: stemless; leaves radical, mostly hastate-sagittate; flowers on a spadix. *Nat. Ord.* 256. *Lindl.* AROIDEÆ.

1. R. VIRGINICA, *Beck.* Leaves hastate-sagittate, acute, the lobes obtuse; spadix closely embraced by the spathe. *Beck. l. c.*
Arum virginicum. *Willd. Sp.* 4. *p.* 484. *Pers. Syn.* 2. *p.* 574. *Ait. Kew.* 5. *p.* 309. *Muhl. Catal. p.* 89. *Pursh, Am.* 2. *p.* 399. *Nutt. Gen.* 2. *p.* 222. *Bart. Phil.* 2. *p.* 181. *Ell. Sk.* 2. *p.* 630. *Lindl. Ency. p.* 800.
Calla virginica. *Mx. Am.* 2. *p.* 187. *Bigel. Bost. p.* 348.
Lecontia virginica. *Torr. Comp. p.* 358. *Eat. Man. p.* 200.
Not *Lecontea*, of *Richard*, and *DC.*

VIRGINIAN RENSSELAERIA.

Plant smooth, deep green. *Root* perennial. *Stem* 0. *Leaves* radical, numerous, 6 to 12 or 15 inches long, and 2 to 5 or 6 inches wide, sagittate-oblong, acute,

or slightly acuminate, mostly somewhat hastate at base, with the lobes obtuse (occasionally the leaves oblong, and not sagittate at base); *petioles* 9 to 15 inches long, chanelled and sheathing below. *Scapes* numerous from the root, 9 to 18 inches high; *spathe* 2 to 3 inches long, green, closely convolute (at first subcylindric, finally ovoid-oblong), acuminate, curved, the margin somewhat undulate; *spadix* nearly as long as the spathe, tapering to a point, and covered with flowers. *Berries* in an ovoid-oblong cluster round the base of the spadix, 1-seeded, *Torr. Beck*, many-seeded, *Nutt. Ell.*

Hab. Bogs, and miry places; Wynn's meadows: rare. *Fl.* June—July. *Fr.*

Obs. This was collected in the above locality, in 1834, by Mr. Joshua Hoopes. Though frequent along tide water, it is very rare in this County. I have not had an opportunity to see the mature fruit. It is the only known species of the genus.

428. QUERCUS. *L. Nutt. Gen.* 751.

[Celtic, *Quer*, handsome, or excellent, and *Cuez*, a tree; on account of its value.]

Staminate Fl. in loose *Aments*. *Perianth* single, mostly 5-cleft. *Stamens* 4 or 5 to 10. Pistillate Fl. *Involucre* of numerous *scales*, united into a cup. *Perianth* single, closely investing the ovary, 6-toothed. *Ovary* 3-celled, 2 of them abortive; *style* 1; *stigmas* 3. *Nut* (or *Acorn*) 1-celled, 1-seeded, coated by the enlarged persistent perianth, and seated in the cup-shaped involucre.

Trees, or rarely shrubs: leaves alternate, stipular, sinuately lobed, coarsely dentate, or entire, deciduous, or sempervirent; aments axillary, filiform, pendulous, with the flowers distinct. *Nat. Ord.* 82. *Lindl.* Cupuliferæ.

§ 1. *Fructification biennial; fruit subsessile.*

Leaves sinuate-lobed; lobes setaceously mucronate.

1. Q. tinctoria, *Bartr.* Leaves obovate-oblong, sinuate-lobed, pubescent beneath; cup turbinate; nut ovoid. *Beck, Bot. p.* 328. Icon. *Mx. f. Sylva*, 1. *tab.* 24 (*fruit, tab.* 25.).
Q. nigra. *Marsh. Arbust. p.* 120. Not of *Mx. Willd.* &c.
Dyer's Quercus. *Vulgò*—Black Oak. Quercitron.

Stem 60 to 80 or 90 feet high, and 2 to 3 or 4 feet in diameter, with large spreading branches above,—the bark rough and blackish. *Leaves* 5 to 8 inches long, and 3 to 6 inches wide, obovate in their outline, more or less deeply sinuate-lobed, with the lobes setaceously mucronate, the base obtuse, or sometimes cuneately tapering, smoothish above, clothed beneath with short stellate or fasciculate hairs, which present a pulverulent appearance;—when young, densely pubescent on both sides,—finally smooth on both sides, except in the axils of the nerves beneath; *petioles* 1 to 2 inches long; *stipules* subulate-filiform, pubescent, caducous. *Staminate flowers* in slender filiform pubescent *aments*. *Acorn* rather small, ovoid, sitting in the thick scaly cup-like *involucre*, which is tapering at base.

Hab. Rich upland woods: common. *Fl.* May. *Fr.* October.

Obs. There is apparently a *variety* of this, on our sterile Mica-slate hills, of smaller scrubby growth, but with the leaves much larger, and less deeply lobed (approaching, somewhat, that of Q. *nigra*, or *black Jack*). The *wood* of this species is not very durable,—nor is it much esteemed for fuel,—yet in consequence of its abundance, it is extensively used for fencing, fire-wood, and shingles. The *bark* is an article of commerce,—used in dying yellow; and is exported in large quantities, under the name of *Quercitron*.

2. Q. COCCINEA, *Wangenh.* Leaves on long petioles, oblong, deeply sinuate-lobed, smooth, the lobes divaricate, dentate; cup subturbinate, conspicuously scaly; nut roundish-ovoid. *Beck, Bot. p.* 329. Icon, *Mx. f. Sylva,* 1. *tab.* 25. (*fruit, tab.* 24.).

CRIMSON QUERCUS. *Vulgò*—Red Oak. Scarlet Oak.

Stem 60 to 90 feet high, and 2 to 3 or 4 feet in diameter, branched above. *Leaves* 4 to 8 inches long, and 3 to 6 inches wide, deeply lobed, the lobes spreading, sinuate-dentate, and setaceously mucronate, the base obtuse, or often somewhat cuneate, both surfaces smooth, and shining green, with a dense tuft of pubescence in the axils of the nerves beneath (when young the leaves are somewhat pubescent, especially on the margin), finally becoming red, and spotted with deeper crimson; *petioles* an inch and half to 3 inches long. *Acorn* roundish-ovoid.

Hab. Rich, moist woodlands: frequent. *Fl.* May. *Fr.* October.

Obs. This is a fine tree. The *wood* is much used for Cooper's stuff, &c. and the *bark* is much esteemed for tanning. I did not distinguish it from the following, when my Catalogue was prepared.

3. Q. RUBRA, *L.* Leaves oblong, obtusely sinuate, smooth; cup saucer-shaped, nearly smooth; nut oblong-ovoid. *Beck, Bot. p.* 329. Icon, *Mx. f. Sylva,* 1. *tab.* 28.
Q. rubra maxima? *Marsh. Arbust. p.* 122.

RED QUERCUS. *Vulgò*—Red Oak. Spanish Oak.

Stem 60 to 90 feet high, and 2 to 4 feet in diameter, branched above. *Leaves* 4 to 8 or 10 inches long, and 3 to 6 inches wide, oblong, or often somewhat obovate, obtusely sinuate-lobed, the sinus shallower than in the preceding species, the lobes dentate, and setaceously mucronate, the base of the leaves rather obtuse, both surfaces smooth, with tufts of pubescence in the axils of the nerves beneath; *petiolcs* 1 to 2 inches long. *Acorn* rather large, oblong-ovoid, in a flat or shallow saucer-like *cup*, of which the scales are so compact as to present a smoothish and nearly even surface.

Hab. Hilly woodlands: frequent. *Fl.* May. *Fr.* October.

Obs. The *wood* of this is also used for Cooper's stuff, &c. and the *bark* is in demand by the Tanners. I think both this and the preceding are often called *Spanish Oak;* but that name seems properly to belong to another species (viz. Q. *falcata, Mx.* or Q. *elongata, Willd.*), which has not yet been observed in this County,—although it has been found in the adjoining County of Deleware, and is abundant in the Counties of New Castle, and Cecil, on the South of us.

4. Q. PALUSTRIS, *Mx.* Leaves oblong, deeply sinuate-lobed, smooth, the lobes divaricate, dentate, the sinuses broad; cup saucer-shaped; nut subglobose, small. *Beck, Bot. p.* 329. Icon, *Mx. f. Sylva,* 1. *tab.* 27.
Q. rubra ramosissima. *Marsh. Arbust. p.* 122.

MARSH QUERCUS. *Vulgò*—Pin Oak. Water Spanish Oak.

Stem 40 to 60 feet high, and 1 to 2 feet in diameter, with numerous rather slender horizontal or drooping branches, which are frequently very knotty. *Leaves* 3 to 5 or 6 inches long, and 2 to 3 or 4 inches wide, deeply lobed, the lobes rather narrow, diverging, or divaricate, acutely sinuate-dentate near the apex, and setaceously mucronate, the sinuses wide or open, the base of the leaves obtuse, or often cuneately tapering, both surfaces smooth, except a tuft of pubescence in the axils of the nerves beneath, the upper surface green and shining; *petioles* 1

to 2 inches long, slender. *Acorn* small (scarcely half an inch long), subglobose, or roundish ovoid, in a smoothish shallow saucer-like *cup*, which is often subturbinate, or slightly and abruptly tapering from the centre of the base.

Hab. Wet low grounds; along rivulets: frequent. *Fl.* May. *Fr.* October.

Obs. The *wood* of this is very firm; and is much used by wheelwrights, &c.

5. Q. Banisteri, *Mx.* Leaves cuneate-obovate, angulate-lobed, cinereous-tomentose beneath; cup sub-turbinate; nut roundish-ovoid. *Beck, Bot. p.* 330. Icon, *Mx. f. Sylva*, 1. *tab.* 21.
Q. nigra pumila? *Marsh. Arbust. p.* 122.
Q. ilicifolia. *Willd. Sp.* 4. *p.* 447. *Pers. Syn.* 2. *p.* 569. *Ait. Kew.* 5. *p.* 292. *Nutt. Gen.* 2. *p.* 215. *Ell. Sk.* 2. *p.* 605. *Bigel. Bost. p.* 352. *Eat. Man. p.* 293.

Banister's Quercus. *Vulgò*—Black Scrub-Oak. Barren Oak.

Stem 3 to 6 or 8 feet high, crooked, and much branched. *Leaves* 2 to 3 or 4 inches long, and 1 to 2 or 3 inches wide, many of them cuneate-obovate, and 3-lobed at apex, others angularly 5-lobed, and somewhat fiddle-shaped, the lobes setaceously mucronate, the upper surface at first pubescent, finally smoothish, the under surface clothed with a short dense cinereous tomentum; *petioles* half an inch to an inch long. *Acorns* small, roundish, or elliptic-ovoid, striate, in very numerous clusters on the branches.

Hab. Sterile slaty hills: frequent. *Fl.* May. *Fr.* September.

Obs. This worthless little species is very abundant on the Mica-slate, or South Valley hills; but is rarely seen on good land.

§ 2. *Fructification annual; fruit mostly pedunculate.*

† *Leaves sinuate-lobed; lobes not mucronate.*

6. Q. obtusiloba, *Mx.* Leaves obovate-oblong, cuneate at base, irregularly sinuate-lobed, the upper lobes dilated, retuse; cup hemispherical, squamose; nut elliptic-ovoid. *Beck, Bot. p.* 330. Icon, *Mx. f. Sylva*, 1. *tab.* 5.
Q. alba minor. *Marsh. Arbust. p.* 120.
Q. stellata. *Willd. Sp.* 4. *p.* 452. *Pers. Syn.* 2. *p.* 570. *Ait. Kew.* 5. *p.* 294. *Muhl. Catal. p.* 87. *Lindl. Ency. p.* 796.

Obtuse-lobed Quercus. *Vulgò*—Barren White-Oak. Post-Oak.

Stem 20 to 30 or 40 feet high, and 1 to 2 feet in diameter, with a light-grey bark, branched above, the branches irregular, spreading, densely pubescent when young. *Leaves* 4 to 6 inches long, and 3 or 4 inches wide, thick and coriaceous, dilated towards the apex, obtusely sinuate-lobed, the upper lobes dilated and emarginate, the terminal one sometimes 2-lobed, the upper surface smoothish and shining (often roughish with short fasciculate hairs, when young), the under one pale ferruginous, or tawny, and clothed with a stellular or fasciculate pubescence; *petioles* half an inch to 3 quarters in length, stout, pubescent. *Acorn* small, elliptic-ovoid, or often roundish-ovoid, with the apex depressed, or umbilicate, the lower half embraced by the scaly hemispherical cup,—the fruit sessile, or often in small clusters on a common peduncle.

Hab. Dry sterile hills; Serpentine banks: frequent. *Fl.* May. *Fr.* Octo.

Obs. This tree is pretty much confined to slaty hills, or serpentine ridges. The *wood* is very durable; and is much valued for posts, &c. It also makes good fuel.

7. Q. ALBA, *L.* Leaves obovate-oblong, nearly equally pinnatifid-sinuate, the segments oblong, obtuse, mostly entire; cup hemispherical, tuberculate; nut ovoid-oblong. *Beck, Bot. p.* 329. ICON, *Mx. f. Sylva*, 1. *tab.* 1.

WHITE QUERCUS. *Vulgò*—Common White-Oak.

Stem 60 to 80 and 100 feet high, and 2 to 4 or 5 feet in diameter, branched above, clothed with a whitish or grey bark. *Leaves* 4 to 6 inches long, and 2 to 4 inches wide, subcoriaceous, smooth, shining green above, paler and somewhat glaucous beneath (pubescent beneath when young), deeply and nearly equally pinnatifid (sometimes cuneate and 3-lobed); *segments* usually 3 or 4 on each side, 1 to 2 inches long, and half an inch to an inch wide, oblong, obtuse, entire, or occasionally sublobed at apex; *petioles* half an inch to an inch long, smooth. *Acorn* rather large, ovoid-oblong, in a bowl-shaped or hemispherical *cup*, which is pubescent, and rough, externally, with roundish tubercles,—the fruit generally in pairs on a common peduncle about half an inch long.

Hab. Woodlands: very common. *Fl.* May. *Fr.* October.

Obs. This is one of our finest and most valuable forest trees; and frequently attains an immense size. Its prevalence, however, is not so indicative of a good soil, as that of the Q. *tinctoria*, or Black Oak. The *wood* is firm and durable, though somewhat liable to warp or spring. It is extensively used in the mechanic arts,—especially by the Ship-wright, the Mill-wright, and the Wheel-wright. The *bark* is astringent and tonic; and is frequently employed in medical practice. The *acorns* are sweet, affording a nutritious and favorite food of hogs. On young trees, the *leaves* are remarkably persistent, after they are killed by the frost, in autumn.

†† *Leaves coarsely dentate,—not lobed.*

8. Q. BICOLOR, *Willd.* Leaves oblong-ovate, acute, softly tomentose beneath, coarsely and unequally dentate, the teeth rather acute; fruit on long peduncles; cup hemispherical; nut ovoid-oblong. *Beck, Bot. p.* 331.

Q. alba palustris? *Marsh. Arbust. p.* 120.

Q. Prinus, *var.* tomentosa. *Mx. Am.* 2. *p.* 196.

Q. Prinus discolor. *Mx. f. Sylva*, 1. *p.* 47. ICON, *tab.* 7.

TWO-COLORED QUERCUS. *Vulgò*—Swamp White-Oak.

Stem 40 to 60 or 70 feet high, and 2 to 3 feet in diameter, with numerous spreading branches, and a scaly light-grey bark. *Leaves* 4 to 6 or 8 inches long, and 2 or 3 to 5 inches wide, varying from broad-ovate to oblong, acute, cuneate and entire at base, with coarse unequal teeth above, which are dilated at base, and rather acute and callous at apex, the upper surface smooth, clothed with a soft velvety tomentum beneath, which is whitish, or cinereous, sometimes pale olive, or greenish ferruginous; *petioles* half an inch to 3 quarters in length. *Acorn* rather large, ovoid-oblong, in a roughish scaly pubescent bowl-shaped *cup*, the margin dentate with the points of the scales; the fruit in pairs (or often single) on an axillary common peduncle 1 or 2 to 4 inches long.

Hab. Low grounds; along streams: frequent. *Fl.* May. *Fr.* October.

Obs. There appears to be two or three *varieties* of this; but they are all much less esteemed than several of the other species.

9. Q. PRINUS, *L.* Leaves obovate and elliptic-oblong, acute, or acuminate, finely pubescent beneath, coarsely and nearly equally sinuate-

dentate, the teeth obtuse; fruit on short peduncles; cup nearly hemispherical; nut ovoid. *Beck, Bot. p.* 331.
Q. Prinus, *var.* palustris. *Mx. Am.* 2. *p.* 196.
Q. Prinus palustris. *Mx. f. Sylva*, 1. *p.* 52. Icon, *tab.* 8.

Vulgò—Swamp Chesnut-Oak. Chesnut White-Oak.

Stem 60 to 80 or 90 feet high, and 2 to 3 or 4 feet in diameter, branched above. *Leaves* 5 to 8 inches long, and 3 or 4 inches wide, generally more or less obovate, sometimes oblong-oval, with a short obtuse acumination, penninerved, with a coarse obtuse tooth for each nerve, and a small callus at the apex, or end of each nerve, the upper surface smooth, paler and finely pubescent beneath; *petiolcs* about an inch long. *Acorn* large, ovoid, or oval, in a squamose bowl-shaped *cup* which embraces nearly 1 third of the acorn, and is seated on a short peduncle.

Hab. Great Valley, near Brooke's Mill: not very common. *Fl.* May. *Fr.* Octo.

Obs. Collected, in the above locality, by Mr. Joshua Hoopes. There seems to be some *varieties* of this, also,—whilst they all bear a considerable general resemblance to the two following species. Indeed, the elder *Michaux* made all the species of this subdivision mere varieties of the Q. *Prinus*.

10. Q. montana, *Willd.* Leaves broad-obovate, acute, pubescent and subglaucous beneath, coarsely and nearly equally dentate, the teeth short, broad and obtuse, submucronate; fruit on short peduncles; cup sub-turbinate; nut elliptic-oblong. *Beck, Bot. p.* 331.
Q. Prinus, *var.* monticola. *Mx. Am.* 2. *p.* 196.
Q. monticola. *Muhl. Catal. p.* 87.
Q. Prinus monticola. *Mx. f. Sylva*, 1. *p.* 56. Icon, *tab.* 9.

Mountain Quercus. *Vulgò*—Rock Chesnut-Oak.

Stem 40 to 60 or 70 feet high, and 1 to 2 or 3 feet in diameter, with spreading branches,—when old, the bark thick, and deeply furrowed. *Leaves* 4 or 5 to 8 or 9 inches long, and 3 to 5 or 6 inches wide, broadly (and sometimes roundish-) obovate, acute, obtusely sinuate- or repand-dentate, the teeth broad, short and obtuse, but often mucronate with a small callous point, the base of the leaf cuneate, or often obtuse, and unequal, the upper surface smooth, the under surface finely pubescent, and paler, or often bluish-glaucous; *petioles* half an inch to near an inch long. *Acorn* large (about an inch and quarter long, and 2 thirds of an inch in diameter), elliptic- or ovoid-oblong, in a rather deep bowl-shaped, or subturbinate, squamose *cup*, which embraces nearly 1 third of the acorn, and is seated on a short peduncle.

Hab. Hilly, rocky woodlands: frequent. *Fl.* May. *Fr.* October.

Obs. The *wood* of this is valuable; and the *bark* highly esteemed by the Tanners. The *acorns*, also, are sweet and nutritious.

11. Q. Castanea, *Muhl.* Leaves oblong-lanceolate, acuminate, pubescent and cinereous beneath, nearly equally dentate, the teeth rather acute, callous at apex; cup hemispherical; nut roundish-ovoid. *Beck, Bot. p.* 331.
Q. Prinus, *var.* acuminata. *Mx. Am.* 2. *p.* 196.
Q. Prinus acuminata. *Mx. f. Sylva*, 1. *p.* 61. Icon, *tab.* 10.

Chesnut Quercus. *Vulgò*—Chesnut-Oak. Yellow Oak.

Stem 40 to 60 or 70 feet high, and 1 to 2 or 3 feet in diameter, branched. *Leaves* 3 to 6 or 7 inches long, and 1 to 2 or 2 and a half inches wide, lance-oblong, or

elliptic-lanceolate, acuminate, obliquely sinuate-dentate, the teeth nearly equal, rather acute, callous at the apex, and along the whole margin of the leaf, the upper surface smooth and yellowish green, the under surface finely pubescent, whitish, or cinereous; *petioles* half an inch to an inch, or inch and quarter, in length. *Acorn* small, roundish-ovoid, in a pubescent bowl-shaped *cup*, which embraces 1 third of the acorn, and is sessile, or often on a short peduncle.

Hab. Great Valley, near Brooke's Mill: not common. *Fl.* May. *Fr.* October.

Obs. This was collected, in 1835, at the above locality, by Mr. Joshua Hoopes —who also found apparent *varieties* of it on the South Valley hills. The leaves are sometimes remarkably long and narrow; but they generally have a striking resemblance to those of the *Chesnut tree*. The *fruit* is said to be more sweet and nutritious than that of any other species.

12. Q. Chinquapin, *Mx.* Leaves obovate, and lance-oblong, obtuse, or acute, coarsely and often obsolctely sinuate-dentate, acute at base, minutely pubescent and glaucous beneath; cup hemispherical; nut ovoid. *Beck, Bot. p.* 331.
Q. Prinus humilis. *Marsh. Arbust. p.* 125.
Q. Prinus, *var.* pumila. *Mx. Am.* 2. *p.* 196.
Q. Prinoides. *Willd. Sp.* 4. *p.* 440. *Pers. Syn.* 2. *p.* 568. *Muhl. Catal. p.* 87. *Lindl. Ency. p.* 796.
Q. Prinus Chincapin. *Mx. f. Sylva*, 1. *p.* 64. Icon, *tab.* 11.

Chinquapin Quercus. *Vulgò*—Dwarf Chesnut-Oak.

Stem 2 to 4 or 5 feet high, slender, and much branched. *Leaves* 2 or 3 to 5 or 6 inches long, and 1 to 3 inches wide, varying from broad-obovate and obtuse, to lance-oblong and acute, more or less dentate, the teeth mostly obtuse, with a callous tip, often nearly obsolete, or the margin merely repand, cuneately tapering and acute at base, smooth above, minutely pubescent and bluish-glaucous beneath; *petioles* 1 fourth to half an inch long. *Acorn* small, ovoid, in a sessile bowl-shaped cup.

Hab. Sterile, slaty hills: frequent. *Fl.* May. *Fr.* October.

Obs. There appears to be two *varieties* of this;—the leaves of one looking like a dwarf specimen of Q. *montana*,—and of the other, like a miniature Q. *Castanea*. This grows abundantly in company with the Black Scrub-Oak; and, like it, is a sure indication of a sterile soil. They both, however, produce great quantities of fruit. Twenty three or four additional species are enumerated in the U. States.

429. CASTANEA. *Tournef. Nutt. Gen.* 754.

[Named from *Castanea*, a city of Thessaly,—famed for Chesnuts.]

Polygamous: Staminate Fl. numerous, interruptedly clustered in very long cylindric *Aments*. *Perianth* 5 or 6-parted. Pistillate Fl. usually 3, within an ovoid squamose, or muricate, *involucre*. *Perianth* urceolate, 5 or 6-cleft, having the rudiments of 10 or 12 *abortive stamens*. *Ovary* incorporated with the perianth; *stigma* penciliform, exserted, cartilaginous and rigid. *Nuts* 1 to 3, included in the enlarged echinate 4-lobed involucre.

Trees, or shrubs: leaves alternate, stipular, mucronately serrate; flowers in long axillary aments; nuts farinaceous. *Nat. Ord.* 82. *Lindl.* Cupuliferæ.

1. C. vesca, var. *americana*, *Mx.* Leaves oblong-lanceolate, acuminate, smooth on both sides. *Torr. Comp. p.* 355.

Fagus-castanea dentata. *Marsh. Arbust. p.* 46.
Castanea vesca. *Willd. Sp.* 4. *p.* 460. *Ait? Kew.* 5. *p.* 298. *Mx. f. Sylva*, 3. *p.* 10 (Icon, *tab.* 104.). *Bigel. Bost. p.* 349. *Florul. Cestr. p.* 106. *Lindl. Ency. p.* 792. *Beck*, *Bot. p.* 332.

Esculent Castanea. *Vulgò*—Chesnut tree.

Stem 50 to 80 or 90 feet high, and 2 to 4 or 5 feet in diameter, branched. *Leaves* 6 to 9 inches long, and an inch and half to 3 inches wide, elliptic- or oblong-lanceolate, acuminate, obliquely sinuate-serrate, the serratures acuminate, smooth (pubescent when young), shining green above, paler beneath, and somewhat pilose on the midrib; *petioles* half an inch to 3 quarters in length; *stipules* linear-lanceolate, entire, smoothish, caducous. *Staminate flowers* small, whitish or ochroleucous, in slender pubescent interrupted spikes, or *aments*, 4 to 8 inches long, the florets crowded in dense bracteate clusters, emitting a heavy unpleasant odor. *Stamens* long. *Pistillate flowers* mostly 3 together, in a scaly squarrose ovoid involucre. *Involucre* mostly solitary, sometimes 3 or 4 in a cluster, subsessile, enlarging, finally globose, 2 or 2 and a half inches in diameter, thickly covered with acute compound or branching prickles, opening at maturity with 4 lobes or valves, nearly to the base, and holding the nuts as in a cup. *Nuts* 3 (by abortion often 2, or 1), roundish-ovate, acuminate, reddish-brown, smooth below, coated with a pale tawny pubescence at summit,—the middle nut flatted on both sides, the lateral ones rounded or gibbous externally,—when the lateral ones are both abortive, the central one becomes roundish-ovoid.

Hab. Woodlands; on slaty hills: common. *Fl.* June. *Fr.* October.

Obs. Although not specifically distinct from the European Chesnut, ours certainly affords a pretty distinct *variety*. The fruit of our native tree is smaller, and much sweeter, than that of the foreign one,—which is cultivated in several places, in this County, under the name of *Spanish Chesnut*. The *wood* of the Chesnut tree is light, yet very durable;—not esteemed for fuel, but highly valued for making fences. The tree seems naturally to abound on our sterile slaty hills, and is of rapid growth,—being speedily reproduced, by suckers from the stump, when cut off, and therefore well calculated to keep up a supply of fencing timber.

2. C. pumila, *Mx.* Leaves obovate-oblong, acute, whitish tomentose beneath. *Beck*, *Bot. p.* 332. Icon, *Mx. f. Sylva*, 3. *tab.* 105. Fagus Castanea pumila. *Marsh. Arbust. p.* 47.

Dwarf Castanea. *Vulgò*— Chinquapin.

Stem 6 to 10 or 12 feet high, and 1 to 2 or 3 inches in diameter, branching. *Leaves* 2 to 6 inches long, and 1 to 2, or 2 and a half, inches wide, varying from lance-oblong, to lance-obovate, acute, mucronately serrate, or sometimes denticulate, green and smoothish above, clothed with a soft dense cinereous tomentum beneath; *petioles* 1 fourth to half an inch long. *Staminate aments* 1 or 2 to 4 inches long, slender and numerous. *Involucre* of the *pistillate flowers* in spikes, or somewhat clustered on short tomentose axillary branches, enlarging, finally globose, an inch or inch and half in diameter, pubescent and prickly, opening at summit with 4 lobes or valves. *Nut* (by abortion?) solitary, small, ovoid, acute, dark brown, pubescent at summit.

Hab. Sterile soils; Oxford, &c. rare. *Fl.* June. *Fr.* October.

Obs. This shrub is met with, occasionally, in the South-western extremity of the County,—and is very abundant in the sterile districts of the adjacent State of Maryland,—but is extremely rare to the North of that. The *nuts* are sweet and pleasant, but scarcely half the size of the Chesnut. One other species, which seems to be nearly allied to this, is enumerated in the Southern States.

430. FAGUS. *L. Nutt. Gen.* 753.

[Latin,—originally from the Greek, *Phago*, to eat; the fruit being esculent.]

Staminate Fl. numerous, in globose pedunculate pendulous *Aments*. *Perianth* campanulate, 6-cleft. Pistillate Fl. 2, in an ovoid muricate *involucre*. *Perianth* urecolate, with 4 or 5 minute segments. *Ovary* incorporated with the perianth; *stigmas* 3. *Nuts* usually 2, included in the enlarged coriaecous muricate 4-cleft involuere.

Trees, with a smooth cinereous bark: leaves alternate, stipular, dentate; flowers in globose aments; nuts oily. *Nat. Ord.* 82. *Lindl.* Cupuliferæ.

1. F. sylvatica, *L.* Leaves elliptic-ovate, acuminate, slightly dentate, ciliate on the margin; nuts ovoid-triquetrous, obtuse, mucronate. *Beck, Bot. p.* 333. var. americana. *Nutt. Bart. Ell.* and *Eat.*

F. sylvatica atropunicea. *Marsh. Arbust. p.* 46.

F. sylvestris. *Mx. Am.* 2. *p.* 194. *Mx. f. Sylva*, 3. *p.* 18. (Icon, *Tab.* 107.).

F. ferruginea. *Muhl. Catal. p.* 86. Not of *Willd. Nutt. Bigel.* &c.

Wood Fagus. *Vulgò*—Beech tree. White Beech.

Stem 30 to 50 or 60 feet high, and 1 to near 2 feet in diameter, coated with a smooth whitish or cinereous bark, and sending out numerous slender horizontal or depending *branches*, which subdivide and terminate in ovoid-lanceolate acute *buds*, 3 fourths of an inch in length. *Leaves* 2 or 3 to 5 inches long, and 1 to 3 inches wide, varying from ovate to elliptic, and lance-ovate, with a short acumination, generally obtuse at base (acute, *Authors*), and often slightly cordate, rarely acute, more or less dentate, sometimes obsoletely so, at others rather strongly, conspicuously ribbed, when young silky-pilose on both sides, ciliate with soft whitish hairs, deep green and finally smoothish on the upper surface, paler beneath, and always more or less pubescent; *petioles* 1 eighth to near half an inch long, hairy; *stipules* long, linear, membranaceous, tawny, caducous. *Staminate aments* very numerous, loosely subglobose, about half an inch in diameter, silky-pubescent, pale greenish-yellow, pendulous on slender silky-pilose *peduncles* an inch to an inch and half long. *Involucres* of the *pistillate flowers* fewer, roundish-ovoid, or oval, enlarging, finally about 2 thirds of an inch in diameter, coriaceous, muricate, with flexible subulate squarrose or recurved points, pubescent and reddish-ferruginous, on rigid subclavate hairy axillary peduncles about half an inch long. *Nuts* 1 or 2 in each involucre, ovoid-triquetrous, obtuse, but mucronate with a short point, pubescent, pale reddish-brown.

Hab. Moist woodlands: frequent. *Fl.* May. *Fr.* Sept—Octo.

Obs. The *wood* of this handsome tree is very close-grained, and is much used for making plane-stocks, shoemakers' lasts, &c. The *leaves*, especially of young trees, are remarkably persistent, after they are killed by the frost,—often remaining on the branches until late in the spring. The oily *nuts* afford a nutritious food for hogs. There is another species enumerated as occurring in the Northern States,—which, judging from the description, seems to be very nearly allied to this.

431. CORYLUS. *L. Nutt. Gen.* 752.

[Greek, *Korys*, a helmet, or cap; in allusion to the involucrate fruit.]

Staminate Fl. imbricated in cylindric *Aments; scales* 3-cleft, the middle segment covering the 2 lateral ones. *Perianth* 0. *Stamens* about 8; *anthers* 1-celled. Pistillate Fl. numerous, in a capitate

squamose cluster. *Perianth* obsolete. *Stigmas* 2. *Nut* bony, roundish-ovoid, obtuse, subcompressed, embraced by the coriaceous lacerate-dentate *involucre*.

Shrubs: leaves alternate, stipular, roundish-cordate, or obovate; aments and pistillate buds subterminal. *Nat. Ord.* 82. *Lindl.* CUPULIFERÆ.

1. C. AMERICANA, *Walt.* Leaves roundish-cordate, acuminate; involucre globose-campanulate, with the border compressed, dilated, many-cleft. *Beck, Bot. p.* 332.

AMERICAN CORYLUS. *Vulgò*—Hazel-nut. Wild Filbert.

Stem 4 to 6 feet high, slender, branching, the young branches virgate, pubescent, and glandular-hispid. *Leaves* 3 to 6 inches long, and 2 to 4 inches wide, varying from roundish-cordate to ovate and obovate, acuminate, dentate-serrate, pubescent; *petioles* 1 fourth of an inch to an inch long; *stipules* ovate-lanceolate, pubescent, caducous. *Aments* preceding the leaves, 1 to 2 inches long, slender, cylindric, greyish-brown; *scales* imbricated, pubescent-ciliate, 3-cleft, the middle segment ovate, acuminate, overlapping and nearly covering the lateral ones. *Pistillate flowers* in capitate pedunculate squamose clusters, the scales numerous, lanceolate, unequal, finally enlarging, uniting, and forming the involucres of the nuts. *Nut* about 2 thirds of an inch long, and 3 fourths of an inch wide, subglobose, somewhat compressed, hard and bony, finely pubescent, pale brown, embraced by the large 2-parted *involucre*, which is twice as long as the nut, ventricose at base, glandular hispid externally, with the border compressed, dilated, and irregularly lacerate-dentate.

Hab. Borders of thickets; fence-rows, &c. frequent. *Fl.* March—April. *Fr.* Sept.

Obs. This shrub is well known for its esculent nuts. There is one other species in the U. States.

432. BETULA. *L. Nutt. Gen.* 755.

[Supposed from *Betu*, the Celtic name for the Birch.]

STAMINATE FL. *Aments* long, cylindric; *scales* ternate, the middle one bearing the stamens. PISTILLATE FL. *Aments* ovoid-oblong; *scales* trifid, 3-flowered. *Styles* 2. *Nuts* compressed, with a membranaceous margin, 1-seeded.

Trees, or rarely shrubs, with the bark often exfoliating in thin plates: leaves alternate, stipular, ovate and serrate; aments axillary. *Nat. Ord.* 82. *Lindl.* BETULINEÆ.

1. B. NIGRA, *L.* Leaves rhomboid-ovate, acute, doubly serrate, entire at base, pubescent beneath; pistillate aments elliptic-oblong, the scales villose, with the segments sublinear and obtuse. *Beck, Bot. p.* 325.
B. lanulosa. *Mx. Am.* 2. *p.* 181. Also, *Pers. Syn.* 2. *p.* 572.
B. rubra. *Mx. f. Sylva*, 2. *p.* 99 (ICON, *tab.* 72.). *Eat. Man. p.* 53.

BLACK BETULA. *Vulgò*—Red Birch. Black Birch.

Stem 40 to 60 or 70 feet high, and 1 to 2 feet diameter, branched, with a smooth bark, the outer layers exfoliating in broad thin revolute laminæ, or sheets; young branches virgate, slender, pubescent. *Leaves* 1 to 4 inches long, and 3 fourths of an inch to 3 inches wide, varying from roundish-ovate to deltoid- and rhomboid-ovate, acute, doubly serrate, smoothish above, more or less pubescent beneath; *petioles* 1 fourth to 3 fourths of an inch long, pubescent; *stipules* small, lance-oblong, membranous, caducous. *Staminate aments* 2 to 3 inches long, slender,

flexible and pendulous. *Pistillate aments* 3 fourths of an inch to an inch long, and 1 third to half an inch in diameter, oblong, obtuse, on short peduncles; *scales* 3-cleft 2 thirds of their length, the *segments* equal, linear, or spatulate-linear, obtuse, villose, especially along the margin. *Nut* much compressed, ovate, winged with a broad membranous pubescent-ciliate margin, which is widest towards the base.

Hab. Low grounds; near West Chester: not common. *Fl.* April. *Fr.* Aug.

Obs. This tree is somewhat abundant along the Susquehanna, and other large streams; but is scarce in this County.

2. B. LENTA, *L.* Leaves cordate-ovate, acuminate, sharply serrate, the nerves beneath and petioles hairy; pistillate aments elliptic-ovoid, the scales roughish pubescent, with the segments ovate-lanceolate, rather acute, prominently veined. *Beck, Bot. p.* 325. Icon, *Mx. f. Sylva, 2. tab.* 74.

B. carpinifolia. *Mx. Am. 2. p.* 181.

SOFT, OR PLIANT BETULA. *Vulgò*—Sweet Birch. Cherry Birch.

Stem 30 to 60 feet high, and 1 to 2 feet in diameter, with numerous branches, which are slender, pliable, smooth, and sprinkled with small white scars. *Leaves* 3 or 4 inches long, and an inch and half to 2 and a half inches wide, thinnish, varying from ovate-oblong to obovate, mostly somewhat cordate, and often a little unequal at base, acuminate, unequally serrate, the serratures acuminate, the upper surface sprinkled with long hairs, the margin and nerves beneath pilose; *petioles* about half an inch long, pilose. *Staminate aments* 2 to 3 inches long, larger than in the preceding. *Pistillate aments* about an inch long, and 2 thirds of an inch in diameter, elliptic-ovoid, obtuse, subsessile; *scales* 3-cleft nearly half their length, cuneate at base, and roughish pubescent externally (glabrous, *Authors*), the segments ovate-lanceolate and lance-oblong, rather acute (obtuse, *Authors*), prominently keeled and nerved, or veined, hirsutely ciliate on the margin. *Nut* compressed, elliptic-obovate, acute at each end, winged with a membranaceous margin which is broader towards the summit, and somewhat ciliate,—but every where narrower and smoother than in the preceding species.

Hab. South Valley hill: rare. *Fl.* April. *Fr.* August.

Obs. This species is quite rare, here. I have only met with it along a rivulet on the South Valley hill, below Geo. Vernon's; but understand it occurs on the Northern side of the County. In districts where the trees abound, the *wood* is said to be esteemed for cabinet work. The bark and young twigs are pleasantly aromatic; and are sometimes employed in domestic brewings, and diet-drinks. Six or seven additional species are enumerated in the U. States.

433. CARPINUS. *L. Nutt. Gen.* 756.

[Celtic, *Car*, wood, and *Pin*, a head; being used in making yokes for caule.]

STAMINATE FL. *Aments* cylindric; *scales* ovate, acute, ciliate near the base. *Anthers* slightly bearded at summit. PISTILLATE FL. *Aments* oblong, loosely imbricated, bracteate, with the flowers in pairs; *scales* unequally 3-lobed, 1-flowered, persistent, enlarging and becoming foliaceous. *Perianth* urceolate, 6-toothed, incorporated with the ovary. *Styles* 2, united at base. *Nut* bony, ovoid, acute, subcompressed, ribbed.

Small trees: leaves alternate, stipular; aments axillary and terminal, the pistillate ones finally racemose, and foliaceous. *Nat. Ord.* 83. *Lindl.* BETULINEÆ.

1. C. AMERICANA, *Mx.* Leaves oblong-ovate, acuminate, unequally serrate; scales of the pistillate ament trifid, the middle segment much the largest, obliquely ovate-lanceolate, unequally serrate-dentate on one side. *Beck, Bot. p.* 326. ICON, *Mx. f. Sylva,* 3. *tab.* 108.
C. Betulus virginica. *Marsh. Arbust. p.* 25.

AMERICAN CARPINUS. *Vulgò*—Hornbeam. Water Beech.

Stem 10 to 20 feet high, and 2 to 4 or 5 inches in diameter, irregularly and obtusely ridged and sulcate, branching (often branched from the root, or growing in small clusters), coated with a smooth light-grey or cinereous bark, like the *Beech. Leaves* 2 to 3 or 4 inches long, and 1 to 2 inches wide, oblong-ovate and lance-oval, acuminate, often slightly cordate at base, sharply and unequally serrate, smoothish, nerved, the nerves beneath somewhat hairy, with small tufts of pubescence in the axils; *petioles* 1 fourth to half an inch long, pilose. *Staminate aments* about an inch long. *Pistillate aments* 2 to 3 inches long, loosely imbricated, or racemose; *flowers* in pairs, each pair subtended by an ovate acuminate deciduous *bract; scales* enlarging, finally about an inch long, and half an inch wide at base, smooth. *Nut* broad-ovoid, somewhat compressed, acute, striated with about 8 ribs, smoothish, dark brown.

Hab. Margins of rivulets: frequent. *Fl.* April. *Fr.* Sept—Octo.

Obs. The only known species in the U. States.

434. OSTRYA. *Micheli. Nutt. Gen.* 757.

[Greek, *Ostreon*, a shell, or scale; in allusion to the structure of the fruit.]

STAMINATE FL. *Ament* cylindric; *scales* orbicular-ovate, acuminate, ciliate. *Anthers* conspicuously bearded at summit. PISTILLATE FL. *Ament* linear, loosely imbricated, bracteate, with the flowers in pairs; *scales* 0, but a membranous sac, or involucre, enclosing each flower. *Perianth* slightly urceolate, subdentate, incorporated with the ovary. *Styles* 2, united at base, *Nut* lance-oblong, somewhat compressed, included in the enlarged imbricated bladder-like sac.

Small trees: leaves alternate, stipular; aments terminal, the pistillate ones of semi-inflated membranous imbricated capsules. *Nat. Ord.* 83. *Lindl.* BETULINEÆ.

1. O. VIRGINICA, *Willd.* Leaves elliptic-ovate, acuminate, sharply serrate; cones oblong; buds acute. *Beck, Bot. p.* 327.
Carpinus Ostrya. *Marsh. Arbust. p.* 25. *Mx. Am.* 2. *p.* 202. *Mx. f. Sylva,* 3. *p.* 30 (ICON, *tab.* 109.).

VIRGINIAN OSTRYA. *Vulgò*—Hop-Hornbeam. Iron-wood.

Stem 20 to 40 feet high, and 4 to 8 or 10 inches in diameter, with a brown roughish slightly-fissured bark, and slender branches which are pilose while young. *Leaves* 2 to 4 inches long, and 1 to 2 inches wide, elliptic-ovate, sometimes inclining to obovate, acuminate, sharply and unequally serrate, the base often unequal, and slightly cordate, smoothish above, somewhat pilose on the nerves beneath, with small tufts of pubescence in their axils; *petioles* about 1 fourth of an inch long, pilose. *Staminate aments* an inch to an inch and half long. *Pistillate aments* mostly terminal and solitary (in pairs, *Authors*), 1 to near 2 inches long, slender and loosely imbricated; *flowers* in pairs, each pair subtended by an ovate-lanceolate membranous striate tawny and very caducous *bract; scales* none,—but each flower contained in an oblong-lanceolate acuminate membranous sac, which is clothed with a cinereous pubescence, and the base thickly beset with rigid tawny hairs,—the *sac* enlarging, and becoming a bladder-like envelope of

the nut, slightly inflated, compressed, elliptic-ovate, or oval, with a short acumination, imbricated, and forming altogether, at maturity, an ovoid-oblong cone, which is pedunculate and rather pendulous (erect, *Authors*), about the size of the *common Hop*,—to which it has considerable resemblance. *Nut* seated in the bottom of the sac, 3 or 4 lines in length, lance-oblong, or elliptic-lanceolate, subacuminate, somewhat compressed, ribbed near the apex, and on each margin, smooth and shining, of a pale olive color with a leaden tinge.

Hab. Woodlands; along Brandywine: not common. *Fl.* April—May. *Fr.* Sept.

Obs. The wood of this slender tree is very hard and firm. It is the only species in the U. States.

435. PLATANUS. *L. Nutt. Gen.* 758.

[Greek, *Platys*, broad; in allusion to its wide-spreading branches and foliage.]

STAMINATE FL. minute, in globose pedunculate *heads*. *Stamens* intermixed with linear scales; *anthers* adnate to the filaments. PISTILLATE FL. minute, in dense globose pedunculate *heads*. *Scales* spatulate. *Ovary* filiform-clavate; *style* with the stigma recurved. *Nuts* numerous, terete, clavate, mucronate with the persistent style, invested with pappus-like hairs at base.

Large trees: leaves alternate, with super-axillary sheathing deciduous stipules, the petioles tumid and hollow at base, covering the young buds; flowers inconspicuous, in globose pendulous heads. *Nat. Ord.* 85. *Lindl.* PLATANEÆ.

1. P. OCCIDENTALIS, *L.* Leaves roundish-pentangular, acuminate, obscurely palmate-lobed, sinuate-dentate, pubescent beneath; branches whitish. *Beck, Bot. p.* 327. ICON, *Mx. f. Sylva*, 2. *tab.* 63.

WESTERN PLATANUS. *Vulgò*—Button-wood. Sycamore.

Stem 60 to 100 feet high, and 2 to 4 or 5 feet, or more, in diameter, with large spreading branches, and a smoothish cinereous bark which exfoliates in thinnish plates. *Leaves* 3 to 6 inches long, and 4 to 8 inches wide (larger on young plants), dilated, roundish-pentagonal, the base at first truncate, finally subcordate, obscurely palmate, or angulate-lobed, unequally sinuate-dentate, with the teeth acuminate, loosely clothed with a hoary branching deciduous pubescence, especially on the under surface; *petioles* 1 to 2 or 3 inches long, at first tomentose, finally smoothish, with the base tumid, hollow, and covering the young bud which is formed within the cavity; *stipules* somewhat salver-form, sheathing the young branches immediately above the petioles, the limb spreading, foliaceous, with coarse unequal sinuate-dentate acuminate teeth, deciduous. *Staminate flowers* minute, in small pedunculate pendulous globose heads, deciduous. *Pistillate flowers* minute, in a dense globose head, which at maturity is about an inch in diameter, pendulous on a slender terete peduncle 3 to 5 inches long, persistent. *Nuts* about 1 third of an inch long, slender, subterete, clavate, mucronate, the base acute and invested with tawny pappus-like hairs, which appear articulated under a lens.

Hab. Banks of streams; roadsides, &c. frequent. *Fl.* April—May. *Fr.* Octo.

Obs. This is a stately tree, and perhaps attains the largest size of any in our country. It makes a noble shade in front of houses where it has room to develope itself. The *wood* is not much esteemed; but is occasionally sawed into joists, and other lumber. It has been considered the only species in this hemisphere; but Mr. *Nuttall* informs me he found another, in his late journey to the N. W. Coast.

436. JUGLANS. *L. Nutt. Gen.* 760.

[Latin, formed from *Jovis Glans*, the nut of Jupiter; from its excellence.]

STAMINATE FL. *Aments* simple, cylindric, loosely imbricated; *scales* 5 or 6-parted, sometimes bracteate at base. *Stamens* subsessile, on a glandular disk. PISTILLATE FL. *Perianth* double, the outer one short, 4-toothed, the inner one longer, 4-parted. *Ovary* inferior, ovoid; *style* very short; *stigmas* 2, large, sub-clavate, spreading, the upper surface lacerate. *Drupe* globose, or oval, spongy, or coriaceous; *nut* rugose, and irregularly sulcate.

Trees: leaves alternate, odd-pinnate, without stipules; staminate flowers in simple aments; pericarps not opening. *Nat. Ord.* 87. *Lindl.* JUGLANDEÆ.

1. J. NIGRA, *L.* Leaflets ovate-lanceolate, subcordate at base, the under surface and petioles slightly pubescent; drupe globose, roughish-dotted, spongy; nut subglobose, corrugated. *Beck, Bot. p.* 335. ICON, *Mx. f. Sylva*, 1. *tab.* 30.

Also, J. nigra oblonga. *Marsh. Arbust. p.* 67.

BLACK JUGLANS. *Vulgò*—Black Walnut.

Stem 30 to 60 or 70 feet high, and 2 to 3 feet in diameter, with spreading crooked branches, often forming a broad roundish and rather open top, clothed with a dark-colored furrowed bark. *Leaflets* in 7 to 10 pairs, with a terminal odd one which is often abortive, 2 to 3 or 4 inches long, and 3 fourths of an inch to near 2 inches wide, ovate-lanceolate, acuminate, serrate, somewhat pubescent, subsessile, the base mostly unequal, and often slightly cordate; *common petioles* 9 to 15 or 18 inches long, more or less pubescent. *Aments* about 2 inches long, with the *scales* a little distant, pedicellate, sub-orbicular, perianth-like, cleft into 5 unequal obtuse segments, and with an ovate *bract* at base. *Pistillate flowers* in small terminal clusters of 2 to 4 on a short *common peduncle; perianth* superior, small, double, the outer one (or *calyx*) with 4 short teeth, the inner one (or *corolla*) longer, 4-parted, the segments lanceolate; *ovary* inferior, ovoid, pubescent, sessile; *style* very short; *stigmas* 2, large, dilated, diverging, the upper surface lacerately fringed. *Drupe* an inch and half to 2 and a half inches in diameter, mostly globose, sometimes ovoid, or inclining to oblong-ovoid, greenish-yellow when mature, and more or less succulent and spongy; *nut* an inch to an inch and half in diameter, subglobose, coarsely rugose and furrowed; the *nucleus*, or *kernel*, 4-lobed, and sulcate, or subdivided.

Hab. Rich woodlands; fence-rows, &c. frequent. *Fl.* May. *Fr.* Octo.

Obs. The *wood* of this species is valuable, and much used by Cabinet-makers &c. The spongy *pericarp* is often employed as a domestic dye-stuff; and the *nucleus*, or *kernel*, although somewhat oily, is generally esteemed. The young *fruit*, and the *leaves*, when bruised, emit a strong and not unpleasant resinous odor. This tree, when prevalent, is a pretty sure indication of a fertile soil; but it exerts an unfriendly influence on many cultivated plants, if placed in its immediate vicinity. There is a *variety* of this (var. *oblonga, Muhl.*) with the drupes somewhat oval, or ovoid-oblong, rougher, harder, and greener (the coating being thinner, and not becoming spongy and yellowish),—which is given by *Marshall* as a distinct species.

2. J. CINEREA, *L.* Leaflets oblong-lanceolate, rounded at base, softly pubescent beneath, with the petioles villose; drupe ovoid-oblong, coriaceous, hairy and viscid; nut elliptic-oblong, acuminate, conspicuously sculptured. *Beck, Bot. p.* 335.

J. oblonga alba. *Marsh. Arbust. p.* 67.
J. cathartica. *Mx. f. Sylva*, 1. *p.* 160 (Icon, *tab.* 31.).
Carya cathartica. *Bart. Phil.* 2. *p.* 178.

Ash-colored Juglans. *Vulgò*—White Walnut. Butter-nut.

Stem 15 to 20 or 30 feet high, and 9 to 15 or 18 inches in diameter, with numerous branches, and clothed with a smoothish cinereous bark. *Leaflets* in 7 or 8 pairs, with a terminal odd one, 2 to 4 or 5 inches long, and 1 to 2 inches wide, oblong-lanceolate, acuminate, serrate, pubescent, softly so beneath, and paler, sessile, the base obtuse and rather rounded, mostly a little oblique; *common petioles* 9 to 12 or 15 inches long, villose. *Aments* 3 to 5 inches long, the *scales* oblong, spreading, with about 3 segments on each margin. *Pistillate flowers* 3 to 5 or 7, in a terminal *spike*, rather distant, sessile on a long *common peduncle; ovary* oblong, hairy; *style* very short; *stigmas* long, pubescent and fimbriate. *Drupe* 2 to 3 inches long, and 1 to near 2 inches in diameter, elliptic-ovoid, with a short tapering protuberance at apex, often slightly compressed and obscurely angled, coriaceous, softly hairy and clammy; *nut* about 2 inches long, and an inch in diameter, oval, acuminate, somewhat compressed, deeply sulcate, with sharp irregular ridges.

Hab. Rich bottom-lands; along streams: frequent. *Fl.* May. *Fr.* Sept—Octo.

Obs. This is a smaller tree, and the *wood* is not so valuable as that of the preceding. The *bark* affords an extract, which is a convenient and popular cathartic. The young *drupes*, collected about the last of June, make excellent *pickles;* and are extensively used for that purpose. The *nucleus* of the mature fruit is oily, and soon becomes rancid,—rendering it unpalatable, and unwholesome. There are no other native species, as the genus is now limited, in the U. States. The J. *regia*, or English Walnut, has been introduced, and is occasionally to be met with about houses; but our winters are rather severe for it,—and it is scarcely entitled to be enumerated among our cultivated plants.

437. CARYA. *Nutt. Gen.* 761.

[Greek, *Karya*, the ancient name of the Walnut tree.]

Staminate Fl. *Aments* mostly ternate, slender, imbricated; *scales* 3-parted. *Stamens* 3 or 4 to 6 or 8; *anthers* hairy. Pistillate Fl. *Perianth* single, 4-cleft. *Ovary* inferior; *style* 0; *stigma* 2-lobed, the lobes bifid. *Pericarp* 4-valved; *nut* oval, somewhat quadrangular, smooth.

Trees: leaves alternate, odd-pinnate, without stipules; pubescence stellate; staminate flowers in compound aments; pericarps opening by 4 valves. *Nat. Ord.* 87. *Lindl.* Juglandeæ.

1. C. alba, *Nutt.* Leaflets mostly 5, obovate- and oblong-lanceolate, acuminate, sharply serrate, villose beneath; aments smoothish; fruit depressed-globose; pericarp thick; nut compressed. *Beck, Bot. p.* 336.
C. squamosa. *Bart. Phil.* 2. *p.* 179. *Florul. Cestr. p.* 105.
Juglans alba ovata. *Marsh. Arbust. p.* 69.
J. alba. *Mx. Am.* 2. *p.* 193. *Pursh, Am.* 2. *p.* 637. Not of *Willd. Pers. Ait. Muhl. Bigel.* nor *Lindl.*
J. compressa. *Willd. Sp.* 4. *p.* 458. *Pers. Syn.* 2. p. 566. *Ait. Kew.* 5. *p.* 297. *Muhl. Catal. p.* 88. *Lindl. Ency. p.* 794.
J. squamosa. *Mx. f. Sylva*, 1. *p.* 181 (Icon, *tab.* 36.). *Bigel Bost. p.* 354.

White Carya. *Vulgò*—Shell-bark Hickory.

Stem 60 to 80 feet high, and 18 inches to 2 feet or more in diameter, with the bark exfoliating in long narrow scales, or plates, which generally adhere in the middle, while the ends are detached and elevated, making the surface very rough and shaggy. *Leaflets* mostly in 2 pairs, with a terminal odd one, 3 or 4 to 6 or 8 inches long, and an inch and half to 2, or 2 and a half inches wide (the terminal one usually largest, and the lower pair much smaller), varying from ovate-lanceolate, to oblong- and obovate-lanceolate, acuminate, finely serrate, with the serratures often mucronate, smoothish above, softly pubescent beneath, the lateral ones sessile, the terminal one on a short petiole; *common petioles* pubescent, 4 to 6 inches long, more than half their length below the lower pair of leaflets. *Aments* at the base of the young growth, 2 or 3 to 4 or 5 inches long, 3-parted or ternate, on a common peduncle, smoothish, pendulous, with a linear-lanceolate *bract* at the base of each lateral ament; *scales* trifid, the lateral segments obtuse, the middle one elongated, lance-linear, acuminate; *stamens* mostly 4, the *anthers* somewhat hairy. *Pistillate flowers* terminal, mostly 2 or 3 together, sessile on a common peduncle; *perianth* superior, or adnate to the ovary, 4-cleft, becoming, in the fruit, the 4-valved pericarp. *Fruit* depressed-globose, somewhat umbilicate at the ends, and depressed or sulcate along the sutures of the pericarp; *pericarp* thick, opening at maturity into 4 distinct valves, or pieces; *nut* about an inch long, sub-orbicular, or oval, somewhat compressed and angular, white, the *shell* thin, and the kernel or *nucleus* large.

Hab. Rich low lands; along streams, &c. frequent. *Fl.* May. *Fr.* Octo.

Obs. The *nuts* of this tree are well known, and highly esteemed. I think we have some *varieties* which may be referred to this species; and among them, perhaps, the one which I gave in my Catalogue, as C. *sulcata*,—a species which *Michaux* says is rare, east of the Alleghanies;—though he adds, that it grows on the Schuylkill, thirty or forty miles above Philadelphia. The whole genus is believed to be peculiar to this Continent.

2. C. microcarpa, *Nutt.* Leaflets 5 to 7, oblong-lanceolate, conspicuously acuminate, serrate, smooth, glandular beneath; aments smooth; fruit roundish-ovoid; pericarp thin; nut slightly quadrangular. *Nutt. Gen. 2. p. 221.*

Juglans compressa, *var.* microcarpa. *Muhl. Catal. p. 88. Bart. Phil. 2. p. 179.*

Small-fruited Carya.

Stem 60 to 80 feet high, and 18 inches to 2 feet in diameter, with an even bark. *Leaflets* in 2 (or not unfrequently 3) pairs, with a terminal odd one, 4 to 8 or 9 inches long, and 2 to 3 inches wide, oblong-lanceolate (the lower pair smaller and ovate-lanceolate), conspicuously acuminate, serrate, smooth on both sides, except a slight villose tuft in the axils of the nerves beneath, the under surface sprinkled with minute dark-purple particles,—the lateral leaflets subsessile and rather obtuse at base, the terminal one tapering and acute at base, on a short petiole; *common petioles* 3 to 6 inches long, smooth. *Aments* ternate, long, slender, smooth; *scales* trifid, the lateral segments ovate, the middle one linear. *Pistillate flowers* terminal, 2 or 3 together, sessile on a common peduncle; segments of the *perianth* lance-ovate, conspicuous. *Fruit* roundish-ovoid, about 3 fourths of an inch in diameter; *pericarp* thin, with the sutures prominent; *nut* somewhat 4-angled, the *shell* thin.

Hab. Moist woodlands: frequent. *Fl.* May. *Fr.* October.

Obs. This seems to be somewhat intermediate between C. *alba*, and one of the varieties of C. *porcina;* and is, perhaps, a good species; though *Muhlenberg* made it a *var.* of C. *alba*, *Nutt.*—and *Barton* considers it rather as a variety of C. *sulcata*, *Nutt.*

3. C. TOMENTOSA, *Nutt.* Leaflets mostly 7, oblong- and obovate-lanceolate, acuminate, slightly serrate, roughish-pubescent beneath; aments tomentose; fruit ovoid, or elliptic-oblong; pericarp very thick; nut somewhat 6-angled, the shell thick and very hard. *Beck*, *Bot. p.* 336.

Juglans alba acuminata? *Marsh. Arbust. p.* 68.

J. tomentosa. *Mx. Am.* 2. *p.* 192. *Pursh*, *Am.* 2. *p.* 637. *Mx. f. Sylva*, 1. *p.* 176 (ICON, *tab.* 35.).

J. alba. *Willd. Sp.* 4. *p.* 457. *Pers. Syn.* 2. *p.* 566. *Ait. Kew.* 5. *p.* 296. *Muhl. Catal. p.* 88. *Bigel. Bost. p.* 353. *Lindl. Ency. p.* 794. Not of *Mx.* and *Pursh.*

TOMENTOSE CARYA. *Vulgò*—White-heart Hickory.

Stem 60 to 80 feet high, and 18 inches to 2 feet in diameter, the bark smoothish, or with the fibres closely interlocked. *Leaflets* generally in 3 pairs, with a terminal odd one, 3 or 4 to 8 inches long, and an inch and half to 3 inches wide (the 2 lower pairs considerably smaller than the others), varying from lance-ovate to obovate-lanceolate, acuminate, serrulate, smoothish above, clothed with a roughish stellate pubescence beneath, and also sprinkled with very minute dark-purple particles among the pubescence,—the lateral leaflets sessile, obtuse and rather unequal at base, the terminal one tapering and acute at base, on a short petiole; *common petiole* 4 to 8 or 9 inches long, very pubescent. *Aments* ternate, 4 to 6 or 7 inches long, filiform, pubescent, with hairy *bracts* at base; *scales* 3-parted, the lateral segments obliquely lance-ovate, the middle one much elongated, linear, hairy. *Pistillate flowers* terminal, mostly in pairs, sessile on a short thick bracteate common peduncle; segments of the *perianth* lanceolate; *ovary* very pubescent. *Fruit* ovoid, or oblong-oval, large (often 2 inches or more in length, and an inch and half in diameter); *pericarp* thick, opening by 4 valves more than half way to the base; *nut* somewhat 6-angled near the apex, the *shell* very thick and hard.

Hab. Rich woodlands: common. *Fl.* May. *Fr.* October.

Obs. This species, also, presents some *varieties*—one of which has a large elliptic or obovoid-oblong fruit. There is a variety of it (var. *maxima*, *Nutt.*), with still larger fruit, grows along the Perkiomen creek, in Montgomery County; and may, perhaps, yet be found along the Schuylkill, in this County. The *wood* of this species is white to the heart, and is celebrated for its excellence as fuel. It is replete, in summer, with a sweet syrup-like sap,—and when cut in that season, is much preyed on by worms.

4. C. PORCINA, *Nutt.* Leaflets about 7, lanceolate, acuminate, serrate, smooth; fruit pyriform, or subglobose; pericarp thin; nut smooth and hard. *Beck*, *Bot. p.* 336.

Juglans alba minima. *Marsh. Arbust. p.* 68.

J. glabra. *Willd. Sp.* 4. *p.* 458. *Pers. Syn.* 2. *p.* 566. *Ait. Kew.* 5. *p.* 297. *Muhl. Catal. p.* 88. *Bigel. Bost. p.* 354. *Lindl. Ency. p.* 794.

Also, J. obcordata. *Willd. l. c. Pers. l. c. Lindl. l. c.*
Also, J. pyriformis. *Muhl. l. c.*
J. porcina. *Pursh, Am. 2. p.* 638. *Mx. f. Sylva*, 1. *p.* 194 (Icon, *tab.* 38.).

Hog Carya. *Vulgò*—Pig-nut Hickory. Broom Hickory.

Stem 40 to 60 or 70 feet high, and 1 to 2 feet in diameter, with a close bark and numerous tough branches. *Leaflets* usually in 3 pairs (but not unfreqnently in 2 or 4 pairs), with a terminal odd one, 2 or 3 to 5 or 6 inches long, and 1 to 2 inches wide, varying from ovate-lanceolate to oblong- and obovate-lanceolate, acuminate, serrate, generally smooth on both sides, sometimes a little pubescent beneath, and sprinkled with minute purple particles,—the lateral leaflets sessile, the terminal one tapering and acute at base, subsessile, or on a very short petiole; *common petioles* 3 to 6 or 7 inches long, smooth. *Aments* ternate, or in pairs, 2 to 4 or 5 inches long, slender and filiform, smoothish, bracteate at base; *scales* trifid, segments lanceolate, the middle one rather longer than the others, acuminate; *anthers* conspicuously hairy. *Pistillate flowers* terminal, solitary, or 2 or 3 sessile, and rather distant, on a common peduncle; segments of the *perianth* long, linear-lanceolate; *ovary* scarcely pubescent. *Fruit* rather small (about an inch long), subglobose, or obovoid,—the obovoid variety often a little compressed, and retuse, or obcordate; *pericarp* thin, opening partially by 4 valves; *nut* smooth and even, the *shell* often hard, but sometimes thin and easily cracked; the *kernel* often astringent and bitter, sometimes esculent.

Hab. Low, moist woodlands: frequent. *Fl.* May. *Fr.* October.

Obs. The young saplings, of this species, were formerly much used for making splint brooms; and the tough sprouts, or seedling plants are often employed as ligatures, in rural economy, under the name of *hickory withes*. The *wood*, of the full grown tree, is used by Wheelwrights for making axles of carts and wagons; and like that of all the species, is much esteemed for fuel. I am disposed to think that the C. *amara*, of my Catalogue, is nothing more than a *variety* of this. In fact, I have found the varieties so numerous, and so perplexing, that I am not well satisfied with the result of my examination of this genus; and therefore commend it to the attention of future observers. I find that mere detached specimens, in flower, or with young fruit, will not serve to determine the true character of the trees. The mature, or, at least, the full-grown fruit, ought to be examined in connection with the features of the entire plant. Four or five additional species are enumerated in the U. States.

Order 8. Monadelphia.

438. PINUS. *L. Nutt. Gen.* 765.
[Supposed from the Celtic, *Pin*, or *Pen*, a rocky mountain; often its place of growth.]

Staminate Fl. in racemosely clustered *Aments; scales* peltate, each bearing 2 sessile 1-celled *anthers*. Pistillate Fl. in ovoid *Aments; scales* closely imbricated, 2-flowered, enlarging and becoming woody, forming a *cone*. *Nut* winged at summit, covered by the oblong imbricated scales of the cone.

Trees: Leaves very narrow and linear, solitary, or fasciculate, mostly sempervirent; aments lateral and terminal, conglomerate, the pistillate ones becoming woody cones. *Nut. Ord.* 223. *Lindl.* Coniferæ.

§ 1. *Scales of the cone even, thin at summit, and rounded.*

† *Leaves solitary, distinct at base.*

1. P. CANADENSIS, *L.* Leaves somewhat distichous, flat, minutely denticulate; cones elliptic-ovoid, terminal, small. *Beck, Bot. p.* 340.
Pinus-Abies americana. *Marsh. Arbust. p.* 103.
Abies canadensis. *Mx. Am.* 2. *p.* 206. *Mx. f. Sylva,* 3. *p.* 185 (ICON, *tab.* 13.). *Lindl. Ency. p.* 804.

CANADIAN PINUS. *Vulgò*—Spruce Pine. Hemlock Spruce.

Stem 30 to 50 feet high, and 1 to 2 feet in diameter, with numerous horizontal, and often rather depending, branches. *Leaves* sempervirent, half an inch to 3 quarters in length, and about half a line wide, linear-oblong, obtuse, minutely denticulate near the apex, smooth, shining green above, bluish-glaucous beneath, especially while young, subsessile, or contracted at base to a very short petiole, distichously arranged on the branches, and crowded at their extremities. *Staminate flowers* in small roundish-ovoid pedunculate *aments*, which are racemosely arranged around and near the ends of the slender branches. *Cones* terminal, somewhat pendulous, about an inch long, and 2 thirds of an inch in diameter, oval, or elliptic-ovoid,—when young bluish-glaucous, finally pale brown, or ferruginous; the *scales* imbricated, obovate, concave, with the apex rounded, thin, and entire.

Hab. Rocky hills; Brandywine, Schuylkill: not common. *Fl.* May. *Fr.* Aug-Sept.

Obs. All the Pines are rather scarce, in Chester County. This one is found in several places on the rocky banks of our larger streams. The *wood*, though often used for joists, &c. in building houses, is not durable when exposed. The *bark* is said to be useful in tanning; and *Marshall* informs us the Aborigines used it to dye their splints, for baskets, of a red color. The Pines of this section seem to me to be very nearly, if not quite, distinct enough, in their habit and character, to warrant the preservation of the genus *Abies*.

§ 2. *Scales of the cone thickened at summit, and mostly acuminate.*

† *Leaves aggregated, mostly sheathed at base: * in pairs.*

2. P. INOPS, *Ait.* Leaves mostly in pairs, rather short; cones oblong-ovoid, somewhat incurved; spines of the scales subulate, straight. *Beck, Bot. p.* 338. ICON, *Mx. f. Sylva,* 3. *tab.* 4.
P. virginiana. *Marsh. Arbust. p.* 102.

POOR, OR DESTITUTE PINUS. *Vulgò*— Scrubby Pine. Jersey Pine.

Stem 15 to 30 or 40 feet high, and 6 to 12 or 15 inches in diameter, with numerous straggling branches. *Leaves* an inch and half to near 3 inches long, very narrow and linear, acute, smooth, scabrous on the margin, mostly in pairs (sometimes in threes), and bound together at base with a sheath. *Staminate flowers* in oblong-ovoid sessile violet-purple *aments*, which are clustered round the branches near their extremities. *Cones* 2 or 3 inches long, ovoid, tapering, and often somewhat curved; *scales* oblong, thickened at summit, with a straight subulate acumination.

Hab. Sterile hills: not common. *Fl.* May. *Fr.* September.

Obs. This occurs on our sterile hills, South of the Great Valley, and also in Kennett,—in which places it was collected by D. TOWNSEND, Esq. and Mr. JOSHUA HOOPES.

* * *Leaves in threes.*

3. P. RIGIDA, *Marsh.* Leaves in threes, with the sheaths short; cones ovoid, often in clusters; spines of the scales rigid, reflexed. *Beck, Bot. p.* 339. ICON, *Mx. f. Sylva,* 3. *tab.* 8.

RIGID PINUS. *Vulgò*—Pitch Pine. Yellow Pine.

Stem 20 to 50 or 60 feet high, and 1 to 2 feet in diameter, with numerous branches, —the lower ones falling off, and leaving a ruggid knotty stem, with a rough fissured bark. *Leaves* 2 to 4 inches long, narrow, linear, acute, slightly keeled, striate, smooth, scabrous on the margin, bound together at base, in fascicles of 3, by a short sheathing membrane. *Staminate flowers* in ovoid-oblong clustered aments. *Cones* 2 to 4 inches long, ovoid, sometimes scattered, but often in clusters round the branches; *scales* cuneate-oblong, thickened at summit, with a rigid sub-ancipital reflexed acumination.

Hab. Mica-slate Hills: not common. *Fl.* May. *Fr.* Sept.

* * * *Leaves in fives.*

4. P. STROBUS, *L.* Leaves in fives, scarcely sheathed at base, slender; cones oblong, subcylindric, pendulous; scales without spines, loose. *Beck, Bot. p.* 339. ICON, *Mx. f. Sylva,* 3. *tab.* 10.

Vulgò—White Pine. Weymouth Pine. New England Pine.

Stem 40 to 60 or 70 feet high, and 18 inches to 2 or 3 feet in diameter, straight, and covered with a smooth bark, especially while young, branched, the branches verticillate, rather slender, and, when the trees are crowded together, chiefly at the summit. *Leaves* 3 to 5 or 6 inches long, very narrow, linear, acute, keeled, or sub-triquetrous, smooth, minutely denticulate or scabrous on the margin, of a bluish or glaucous-green color, aggregated in fascicles of 5, which are numerous on the branches, and stand on short protuberances, but are without any sheath at base, except the deciduous bud-scales. *Staminate flowers* in small ovoid aments which are sessile and clustered round the base of the young branches, forming a linear-oblong spike. *Cones* 3 to 5 inches long, and an inch or inch and half in diameter, nearly cylindric, somewhat curved, pendulous, generally smeared with the exuding turpentine; *scales* cuneate-obovate, slightly thickened at summit, but not acuminate, loosely imbricated.

Hab. Rich woodlands; old fields, &c. not common. *Fl.* May. *Fr.* Aug—Sept.

Obs. This species does not often attain a large size in this County; but on the rich bottom lands along the branches of the Susquehanna it becomes a noble tree, —frequently more than 100 feet in height, and 4 or 5 feet in diameter, with the stem straight, and free from branches except near the summit. The value of its *wood*, in affording boards, shingles, and other lumber, is well known. Twelve or fourteen additional species (including the *Firs*, and *Larches*) are enumerated in the U. States.

439. PHYLLANTHUS. *L. Nutt. Gen.* 774.

[Gr. *Phyllon*, a leaf, & *Anthos*, a flower; the flowers being connected with the leaves.]

STAMINATE FL. *Perianth* 6-parted; *segments* spreading, colored, persistent. *Stamens* 3, very short, spreading, united, or approximate, at base; *anthers* didymous. PISTILLATE FL. *Perianth* as in the staminate flowers. *Styles* 3, bifid. *Capsule* 3-celled; cells 2-valved, 1 or 2-seeded.

Herbaceous, or frutescent: leaves simple, alternate, stipular, with small axillary flowers,—or sometimes pinnate, with the leaflets floriferous. *Nat. Ord.* 88. *Lindl.* EUPHORBIACEÆ.

1. P. CAROLINENSIS, *Walt.* Herbaecous; creet; branches alternate and distichous; leaves simple, elliptic-obovate, obtuse, smooth, alternate and somewhat distichous, on short petioles; flowers few, axillary, nodding on short pedicels. *Beck, Bot. p.* 311.

P. obovatus. *Willd. Sp.* 4. *p.* 574. *Pers. Syn.* 2. *p.* 589. *Ait. Kew.* 5. *p.* 333. *Muhl Catal. p.* 84. *Pursh, Am.* 2. *p.* 443. *Nutt. Gen.* 2. *p.* 227. *Torr. Comp. p.* 361. *Lindl. Ency. p.* 810. *Eat. Man. p.* 262.

CAROLINA PHYLLANTHUS.

Root annual, fibrous. *Stem* 6 to 10 or 12 inches high, slender, but rather rigid, terete, smooth, sometimes dark purple, branching (often nearly simple), the branches alternate and distichously arranged, very slender, spreading. *Leaves* alternate, and somewhat distichous, 1 third to 3 fourths of an inch long, and 1 sixth to 1 third of an inch wide, oblong and more or less obovate, generally obtuse, sometimes rather acute, entire, smooth, palish glaucous beneath, mostly acute at base, on *petioles* scarcely a line in length; *stipules* minute, ovate-lanceolate, acuminate. *Flowers* minute, 2 to 4 in each axil, the staminate and pistillate ones intermingled. *Perianth* inconspicuous, ochroleucous, with a purplish tinge at base, mostly 6-parted, the segments spreading, persistent,—those of the *staminate* flowers roundish-obovate,—of the *pistillate* ones oblong, or spatulate. *Capules* small, depressed-orbicular, obscurely 3-lobed and slightly sulcate, smooth, greenish, 3-celled, 6-valved (or with 3 principal valves, and each valve again splitting into 2),—the valves opening elastically, and falling off, leaving the acute central column, or receptacle of the seeds, standing in the centre of the persistent perianth. *Seeds* 2 in each cell, triquetrous with the outer side convex, ferruginous-tawny, minutely striate-muricate, or covered with elevated dots which are disposed in lines.

Hab. Moist grounds; Londongrove: rare. *Fl.* July—Aug. *Fr.* Sept—Octo.

Obs. I am indebted, for specimens of this, to my obliging friend, WM. JACKSON, Esq.—who collected it, in 1832, near his residence, in Londongrove;—the only known locality as yet, within the County. It is a slender inconspicuous plant,—and although very distinct, reminds one of the little *Anychia.* It is the only known species in the U. States.

440. ACALYPHA. *L. Nutt. Gen.* 768.

[A Greek name for the Nettle; which this somewhat resembles.]

STAMINATE FL. *Perianth* 3 or 4-parted. *Stamens* 8 to 16, very short, connected at base. PISTILLATE FL. *Perianth* 3-parted; *segments* connivent, persistent. *Styles* 3, long, 2 or 3-parted. *Capsule* 3-lobed, 3-celled; *cells* 1-seeded.

Herbaceous, or frutescent: leaves alternate, stipular; flowers axillary, with a bract-like involucre, the staminate ones spiked. *Nat. Ord.* 88. *Lindl.* EUPHORBIACEÆ.

1. A. VIRGINICA, *L.* Leaves ovate, and oblong-lanecolate, obtusely serrate, petiolate; involucre pedicellate, roundish-cordate, acuminate, concave, unequally lobed; pistillate flowers at the base of the staminate spikes. *Beck, Bot. p.* 311.

Also? A. caroliniana. *Bart. Phil.* 2. *p.* 184. *Florul. Cestr. p.* 108. *Beck, l. c.* Not of *Ell.* &c.

Virginian Acalypha. *Vulgò*—Three-seeded Mercury.

Root annual, fibrous. *Stem* 9 to 18 inches high, terete, or sometimes a little angular, often striate, more or less pubescent and pilose, branching,—the branches often with the leaves and involucres crowded, like a leafy raceme, and dark purple. *Leaves* 1 to 3 inches long, and 1 third of an inch to near 2 inches wide, varying from ovate and rhomboid-ovate to lance-oblong, tapering to the apex, but rather obtuse, more or less crenate-serrate, sometimes obscurely so, entire at base, 3-nerved, pilose, and rough with minute dots; *petiolcs* 1 fourth of an inch to 2 inches long, slender, striate, pilose; *stipules* minute, subulate-linear. *Flowers* minute, axillary, with a pedicellate bract-like *involucre*. *Staminate flowers* very minute, in a small interrupted pedunculate *spike* which is longer than the involucre, and inserted at its cordate base. *Involucre* 1 third to half an inch long, roundish or broad-cordate, acuminate, concave or sub-campanulate, nerved, roughish-dotted, pilose, and often hirsutely ciliate, cleft into unequal lance-oblong segments about half way to the base. *Pistillate flower* at the base of the involucre and peduncle of the staminate spike. *Capsute* 3-lobed, or of 3 united cells, hirsute,—the valves elastic, and involute after bursting. *Seeds* ovoid, punctate, dark purplish-brown, often maculate with whitish spots.

Hab. Pastures; woodlands, &c. common. *Ft.* July—Aug. *Fr.* Sept—Octo.

Obs. This plant (which, in its general habit, somewhat resembles *Parietaria pennsylvanica*) presents some striking *varieties*,—one of which I supposed, when I published my Catalogue, might be the A. *caroliniana;* but I have since seen that species, and find it to be quite distinct. It is doubtful, indeed, whether the two plants belong to the same genus; and if not, the present is the only known species in the U. States.

441. LAGENARIA. *Ser. DC. Prodr.* 3. *p.* 299.

[Greek, *Lagenos*, a flagon, or bottle; from the shape of the fruit.]

Calyx campanulate, 5-toothed; teeth lance-subulate, shorter than the tube. *Petals* 5, obovate, adnate to the calyx below its margin. Staminate Fl. *Stamens* 5, triadelphous, the fifth one free; *anthers* 2-celled, very long and tortuous. Pistillate Fl. *Ovary* inferior; *style* scarcely any; *stigmas* 3, thick, 2-lobed, granular. *Fruit* a ligneous *pepo*, 1-celled, with 3 parietal placentæ. *Seeds* arillate, obovate, compressed, 2-lobed at apex, the margin tumid.

Herbaceous: mostly climbing by tendrils; leaves alternate, cordate, palmate-nerved; flowers axillary, solitary, pedunculate. *Nat. Ord.* 181. *Lindl.* Cucurbitaceæ.

1. L. vulgaris, Ser. *Softly pubescent; stem climbing; leaves roundish-cordate, denticulate, biglandular at base; fruit clavate-ventricose, ligneous and smooth at maturity.* DC. Prodr. 3. p. 299.

Cucurbita Lagenaria. L. and the Authors, generally, here cited.

Common Lagenaria. Vulgò—*Calabash. Bottle Gourd.*

Gallicè—*Calebasse.* Germ.—*Der Kuerbiss.* Hisp.—*Calabaza.*

Whole plant softly pubescent, somewhat viscid, and emitting a fœtid musky odor. Root *annual.* Stem 10 *to* 15 *or* 20 *feet long, slender, branching, climbing by lateral branching tendrils.* Leaves 4 *to* 6 *or* 8 *inches long, and about as wide as long, roundish-cordate, with a short slender acumination, denticulate, palmate-*

nerved, with 2 glands at base; petioles 2 *to* 6 *inches long.* Flowers *axillary, on long peduncles;* corolla *white, veined.* Fruit 12 *to* 15 *or* 18 *inches long, and* 4 *to* 6 *or* 8 *inches in diameter, clavate-ventricose, or unequally bi-ventricose, finally nearly hollow, ligneous, and smooth.* Seeds *in a dry membranous* arillus.

Hab. *Gardens, and cultivated lots: frequent.* Fl. *July—Aug.* Fr. *Sept—Octo.*

Obs. *Often cultivated for its* fruit,—*the thin firm woody shell of which affords a convenient kitchen utensil. There are several varieties of this—especially in the form of the fruit. It is believed there are no native species in the U. States; though this is said to have been cultivated by the Aborigines, from time immemorial.*

442. CUCUMIS. *L. DC. Prodr.* 3. *p.* 299.

[Supposed from the Celtic, *Cuce*, a hollow vessel.]

Calyx tubular-campanulate, 5-toothed; teeth subulate, scarcely as long as the tube. *Petals* 5, nearly distinct, and scarcely adnate to the calyx. Staminate Fl. *Stamens* 5, triadelphous; *anthers* very long and tortuous. Pistillate Fl. (sometimes *perfect*). *Ovary* inferior; *stigmas* 3, thick, 2-lobed, subsessile. *Fruit* a fleshy 3 to 6-celled *pepo*. *Seeds* obovate-oblong, compressed, acute at base, not margined.

Herbaceous: procumbent, or climbing by tendrils; leaves alternate, subcordate and palmate-nerved, or lobed; flowers axillary, solitary, on short peduncles. *Nat. Ord.* 181. *Lindl.* Cucurbitaceæ.

1. C. Melo, L. *Stem prostrate, scabrous; leaves subcordate, obtuse, somewhat angled, the angles rounded; flowers polygamous, the fertile ones perfect; fruit oval, or subglobose, torulose.* DC. Prodr. 3. p. 300.

Melon Cucumis. Vulgò—*Musk Melon. Cantalupe.*

Gallicè—*Melon.* Germ.—*Melone.* Hisp—*Melon almizcleño.*

Plant hirsute and roughish. Root *annual.* Stem *a succulent vine* 5 *to* 8 *or* 10 *feet long, procumbent, sparingly branched, bearing simple tendrils.* Leaves 3 *or* 4 *inches long, and rather wider than long, roundish-cordate, palmate-nerved, somewhat angulate-lobed, the lobes rounded, obscurely denticulate;* petioles 2 *to* 3 *inches long.* Flowers *axillary, on short peduncles;* corolla *yellow.* Fruit 6 *to* 12 *inches long, and* 4 *to* 6 *or* 7 *inches in diameter, oval or oblong, sometimes nearly globose, roughish, longitudinally ridged and grooved, or torulose, fleshy,—the flesh, when mature, yellowish, succulent, and of a spicy flavor.* Seeds *whitish.*

Hab. *Gardens, and cultivated lots: frequent.* Fl. *June.* Fr. *August.*

Obs. *This is not unfrequently cultivated, here, for the table; but the best ones come from the warm sandy soil of New Jersey.*

2. C. sativus, L. *Stem procumbent, scabrous; leaves subcordate and angulate-lobed, the terminal lobe prominent; fruit oblong, obscurely and obtusely trigonous, scabrous when young, finally smoothish.* DC. Prodr. 3. p. 300.

Cultivated Cucumis. Vulgò—*Cucumber.*

Gallicè—*Le Concombre.* Germ.—*Die Gurke.* Hisp.—*Pepino.*

Plant rough and hispid. Root *annual.* Stem *a succulent vine* 6 *to* 12 *or* 15 *feet long, somewhat branching, prostrate, or somewhat climbing by its simple tendrils, when supports are within reach.* Leaves 3 *to* 5 *or* 6 *inches long, and nearly as*

wide as long, somewhat 5-angled and lobed, lobes acute, entire or minutely denticulate on the margin, the middle or terminal one longest; petioles 2 *to* 3 *or* 4 *inches long.* Flowers *axillary, on short peduncles;* corolla *yellow.* Fruit 6 *to* 12 *inches long, and* 2 *to* 3 *or* 4 *inches in diameter, elliptic-oblong, obscurely trigonous, or with* 3 *obtuse longitudinal ridges, rough with bristle-pointed tubercles when young, finally smoothish, and of a tawny yellow color.* Seeds *lance-oblong, whitish.*

Hab. *Gardens, and cultivated lots: common.* Fl. *June—Sept.* Fr. *Aug—Octo.*

Obs. *Universally cultivated for the table. The young fruit (sometimes called* Gherkins—*gallicè,* Cornichons—) *affords an esteemed* pickle.

3. C. Anguria, *L. Stem prostrate, slender, hispid; leaves palmate-sinuate, cordate at base; fruit subglobose, or oval, echinate.* DC. Prodr. 3. p. 301.

Vulgò—*Prickly Cucumber. Jerusalem Cucumber.*

Plant hirsute. Root *annual.* Stem 3 *to* 6 *feet long, very slender, prostrate, branching, angular, and hirsute, bearing simple tendrils.* Leaves 3 *or* 4 *inches long, and* 2 *or* 2 *and a half inches wide, deeply sinuate-lobed;* petioles 1 *or* 2 *inches long.* Flowers *greenish yellow, on axillary peduncles.* Fruit *usually about an inch and half long, and an inch in diameter, elliptic-ovoid, or oval, muricate, green.* Seeds *whitish.*

Hab. *Gardens: frequent.* Fl. *July—August.* Fr. *Sept.*

Obs. *Often cultivated for the* young fruit,—*which is used for* pickles.

4. C. Citrullus, Ser. *Stem prostrate, slender, hairy; leaves obtusely sinuate-pinnatifid, bluish-glaucous beneath; flowers solitary, pedunculate, with a single bract; fruit elliptic, smooth, stellate-maculate.* DC. Prodr. 3. p. 301.

Cucurbita Citrullus. L. and the Authors here cited.

Vulgò—*Water Melon.*

Gallicè—*Melon d'eau.* Germ.—*Wasser Melone.* Hisp.—*Sandia.*

Plant hairy. Root *annual.* Stem 8 *to* 12 *or* 15 *feet long, slender, angular, very hairy, somewhat branching, procumbent, with branching tendrils.* Leaves 3 *to* 5 *or* 6 *inches long, and* 2 *to* 3 *or* 4 *inches wide, ovate in their outline, somewhat* 5*-lobed, with the principal lobes sinuate-pinnatifid, the segments all obtuse;* petioles 2 *to* 3 *inches long, generally erect.* Flowers *axillary, on hairy peduncles an inch or more in length, with a single lance linear or oblong* bract *at the base of the peduncle;* corolla *pale greenish-yellow, or ochroleucous.* Fruit 12 *to* 18 *or* 20 *inches long, and* 6 *to* 12 *inches in diameter, elliptic, or subglobose, smooth, with a firm fleshy rind, and, when mature, with a tender sweet watery pulp within, which is usually purple, sometimes nearly white.* Seeds *obovate, varying from purple to nearly black.*

Hab *Gardens, and cultivated lots: frequent.* Fl. *June—Aug.* Fr. *Aug—Sept.*

Obs. *This plant, so well known for its delicious fruit, is often cultivated, here; but our principal supply is furnished from New Jersey,—where the fruit comes to greater perfection. There are several* varieties *of this, and of all the preceding species. I have followed* Prof. De Candolle *in arranging this plant with* Cucumis; *but it seems to me to be rather an arbitrary and unnatural association. There are no native species in the U. States.*

443. SICYOS. *L. Nutt. Gen.* 778.

[*Sikyos*, an ancient Greek name of the Cucumber.]

Calyx campanulate, 5-toothed. *Corolla* 5-parted; *lobes* ovate. STAMINATE FL. *Stamens* 3, with the filaments united. PISTILLATE FL. *Ovary* inferior; *stigma* thickish, trifid. *Fruit* a dry 1-seeded drupe-like *pepo*, often spinose. *Seed* ovate.

Herbaceous: climbing by tendrils; leaves alternate, palmate-nerved; flowers in capitate clusters on axillary peduncles. *Nat. Ord.* 181. *Lindl.* CUCURBITACEÆ.

1. S. ANGULATUS, *L.* Leaves broad-cordate, somewhat angulate-5-lobed, denticulate, lobes acuminate; fruit spinescent and villose, in dense capitate pedunculate clusters. *Beck, Bot. p.* 128.

ANGULATE SICYOS. *Vulgò*—Single-seeded Cucumber.

Root annual. *Stem* 10 to 15 or 20 feet long, slender, branching, striate, pubescent, climbing by tendrils which are somewhat umbellately branched. *Leaves* 3 to 5 or 6 inches long, and about as wide as long, pentagonal in their outline, cordate at base, obscurely 5-lobed, or sinuate-angled, denticulate, roughish-pubescent; *petioles* 2 to 3 inches long. *Flowers* greenish-white, clustered on axillary *common peduncles* 1 or 2 to 4 or 5 inches in length; *staminate ones* corymbose-capitate, with the common peduncle longer; *pistillate ones* in dense capitate clusters; *fruit* compressed, ovate, in stellately globose heads about an inch in diameter, villose, and armed with roughish slender tawney spines about 1 third of an inch long.

Hab. Banks of Schuylkill, at Black Rock: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. Collected in the above locality, in 1829, by D. TOWNSEND, Esq. It has been introduced about some houses, to run over arbors, &c.—but it is a pernicious plant in gardens, and cultivated lots; and very difficult to get rid of. The leaves (and indeed the general habit of the plant) have considerable resemblance to those of the common Cucumber. It is the only species in the U. States.

444. MOMORDICA. *L. Nutt. Gen.* 776.

[Latin, *mordeo*, to bite, or chew; the seeds being rugose, as if chewed.]

Calyx 5-cleft; *tube* very short. *Corolla* 5-parted. STAMINATE FL. *Stamens* triadelphous; *anthers* connate. PISTILLATE FL. *Ovary* inferior, 3-celled; *style* 3-cleft. *Fruit* a muricate *pepo*, bursting elastically when mature. *Seeds* compressed, reticulately rugose.

Herbaceous: climbing by tendrils; leaves alternate, palmate-lobed; flowers on axillary bracteate peduncles. *Nat. Ord.* 181. *Lindl.* CUCURBITACEÆ.

1. M. BALSAMINA, L. *Leaves palmate-5-lobed, dentate, naked, shining; fruit roundish-ovoid, attenuate at each end, angular, tuberculate, bursting irregularly on one side; bract above the middle of the peduncle, orbicular-cordate, dentate.* DC. Prodr. 3. p. 311.

BALSAM MOMORDICA. Vulgò—*Balsam Apple.*

Root *annual.* Stem 3 *to* 5 *feet long, slender, branching, sulcate-angled, smooth, climbing by its simple smooth tendrils.* Leaves 2 *or* 2 *and a half inches long, and rather wider than long, somewhat reniform-cordate in their outline, sinuate-palmate and dentate, deep green, not hairy, but roughish-dotted;* petioles *about an inch long.* Flowers *pale yellow, or ochroleucous, on slender axillary bracteate* peduncles 2 *or* 3 *inches in length;* bract *about half an inch long, roundish-cordate, dentate, veined, often whitish-maculate or discolored, situated rather above*

the middle of the peduncle (below the middle, DC.). Fruit *somewhat ovoid, tapering at each end, angular, tuberculate, of a reddish-orange color when mature.*
Hab. *Gardens: not very common.* Fl. *July—August.* Fr. *Sept.*

Obs. *This is occasionally cultivated for its* fruit, *which is reputed balsamic and vulnerary. I find, also, in our gardens, indiscriminately cultivated with this, the* M. Charantia, L.—*with the stem pubescent, the leaves seven-lobed, cordate in their outline, and hirsute on the nerves, the tendrils pubescent, the bracts entire, and situated below the middle of the peduncles, the fruit oblong and acuminate. There has been one* native species *(though of somewhat doubtful generic character) found in the U. States.*

445. CUCURBITA. *L. DC. Prodr.* 3. *p.* 316.

[The Latin name for a gourd, or hollow vessel; applied to this genus.]

Corolla campanulate; the *petals* coalesced with each other, and with the calyx. Staminate Fl. *Calyx* hemispherical-campanulate. *Stamens* 5, triadelphous and syngenesious; *anthers* straight and parallel, with the base and apex abruptly curved. Pistillate Fl. *Ovary* inferior; *calyx* obovoid-clavate, always circumscissed below the limb, after flowering; *stigmas* 3, thick, 2-lobed. *Fruit* a fleshy, or subligneous, *pepo*, 3 to 5-celled. *Seeds* obovate, compressed, smooth, the margin scarcely tumid.

Herbaceous: procumbent, or somewhat climbing by tendrils; leaves alternate, subcordate and palmate-nerved; flowers axillary, subsolitary, pedunculate. *Nat. Ord.* 181. *Lindl.* Cucurbitaceæ.

1. C. Pepo, L. *Leaves cordate, somewhat 5-lobed, denticulate; fruit subglobose, oblong, or subclavate, smooth, fleshy.* DC. Prodr. 3. p. 317.

Vulgò—*Pumpkin.* Gallicè—*La grosse Citrouille. Potiron.*

Plant rough and hispid. Root *annual.* Stem *a succulent vine* 10 *to* 20 *feet long, angular, sparingly branched, procumbent, or somewhat climbing by branched tendrils.* Leaves 9 *to* 12 *or* 15 *inches long, and nearly as wide as long, obtusely cordate, somewhat 5-lobed, denticulate;* petioles 3 *to* 6 *or* 8 *inches long.* Flowers *yellow, large, axillary, the* staminate *ones often solitary on a long peduncle,—or sometimes subsessile in small clusters on a common peduncle, and then generally abortive.* Fruit *varying from depressed-globose to oval, oblong, and clavate, large, smooth, dark green, or yellow, or mottled with yellow and cinereous, the rind thick and fleshy, the cavity loosely filled with a stringy pulp.*

Hab. *Cultivated lots; Indian-corn fields: common.* Fl. *July.* Fr. *October.*

Obs. *Extensively cultivated for its fruit,—of which there are numerous* varieties;—*some of them attaining an enormous size (2 feet or more in diameter), but not so valuable. The better sorts are often used at table,—affording the celebrated* Pumpkin pie *of New England; and the coarser varieties are esteemed for feeding stock. When growing in the vicinity of* Squashes, *the* fruit *of this is liable to be converted into a* Hybrid, *of little or no value. I have had a crop of Pumpkins totally spoiled by that cause,—the fruit becoming very hard and warty,—unfit for the table, and unsafe to give to cattle.*

2. C. Melopepo, L. *Leaves cordate, somewhat 5-angled, denticulate; fruit orbicular and much depressed, or clypeate, with the margin mostly tumid.* DC. Prodr. 3. p. 317.

Vulgò—*Round Squash. Cymling.* Gallicè—*Bonnet de Prêtre.*

Plant hirsute. Root *annual.* Stem *a succulent vine* 8 *to* 12 *feet long, angular, somewhat branching, procumbent, or sometimes climbing by the branched tendrils; —sometimes the tendrils are converted into imperfect* leaves, *and the* branches *themselves very numerous, and flatted, or dilated.* Leaves 6 *or* 8 *inches long, and nearly as wide as long, roughish-pubescent, subcordate, somewhat* 5*-lobed, the terminal lobe rather elongated, tapering to a point;* petioles *as long as the leaves, and often longer.* Flowers *yellow, rather large, pedunculate.* Fruit *orbicular and much depressed, or buckler-shaped, often somewhat torulose, and with the margin tumid, generally smooth, sometimes verrucose, yellow,* green, *or mottled, finally hard and subligneous.*

Hab. *Gardens, and cultivated lots: frequent.* Fl. *July.* Fr. *October.*

Obs. *Cultivated for the* young fruit,—*which is generally esteemed as a vegetable sauce. There are numerous* varieties *of the fruit,—and of various qualities.*

3. C. VERRUCOSA, L. *Leaves cordate, deeply* 5*-lobed, denticulate, the middle lobe narrowed at base; fruit clavate, or elliptic, verrucose.* DC. Prodr. 3. p. 317.

Warty Cucurbita. Vulgò—*Warted Squash. Long Squash.*

Plant hirsute. Root *annual.* Stem *a succulent vine* 10 *to* 15 *feet long, angular and somewhat branching, procumbent, or sometimes climbing by the tendrils.* Leaves *rather larger than in the preceding species, and more deeply lobed.* Flowers *yellow, rather large.* Fruit *varying from elliptic to obovoid, and often much elongated, elavate and incurved, roughened with warts or obtuse tubercles, green, yellow, or mottled, finally hard and subligneous.*

Hab. *Gardens, and cultivated lots: frequent.* Fl. *July.* Fr. *October.*

Obs. *Cultivated as the preceding; and, like it, subject to several* varieties. *It is very apt to produce worthless* hybrids *amongst Pumpkins, when growing near them,—as remarked under No.* 1; *and therefore should never be planted in their immediate vicinity. There are no native species known in the U. States. This last, however, is said, by Mr.* Nuttall, *to be cultivated by the Indians of the Missouri to its sources.*

CLASS XX. DIOECIA.

Order 2. Diandria.

446. VALLISNERIA. *L. Nutt. Gen.* 779.
[In honor of *Antonio Vallisneri;* an Italian Botanist.]

Staminate Fl. *Spathe* 2 to 4-parted. *Spadix* on a very short scape, conical, covered with minute sessile florets. *Perianth* 3-parted. Pistillate Fl. *Scape* very long, spiral, or flexuose. *Spathe* tubular, bifid, 1-flowered. *Perianth* 6-parted, the *segments* alternately ovate, and linear. *Ovary* inferior, long, linear; *stigmas* 3, subsessile, ligulate, semibifid. *Capsule* valveless, long, linear, 1-celled, many-seeded. *Seeds* parietally attached.

Herbaceous, submersed aquatics: leaves all radical; flowers on axillary or interfoliaceous scapes,—the pistillate ones solitary, with the scape very long, filiform, and flexuose, or spirally twisted. *Nat. Ord.* 231. *Lindl.* Hydrocharideæ.

1. V. SPIRALIS, *L.* var. *americana*, *Torr.* Leaves linear, obtuse, minutely aculeate on the margin; pistillate scapes flexuose. *Beck, Bot. p.* 342.

V. americana. *Mx. Am.* 2. *p.* 220. *Willd. Sp.* 4. *p.* 651. *Pers. Syn.* 2. *p.* 598. *Muhl. Catal. p.* 91. *Pursh, Am.* 2. *p.* 602. *Nutt. Gen.* 2. *p.* 230. *Bart. Phil.* 2. *p.* 188. *Ell. Sk.* 2. *p.* 666. *Bigel. Bost. p.* 364. *Florul. Cestr. p.* 108.

SPIRAL VALLISNERIA. *Vulgò*—Eel-grass. Tape-grass. Channel-weed.

Root perennial, fibrous. *Leaves* all radical, 9 to 18 inches, or 2 feet, in length, and 1 sixth to half an inch wide, linear and somewhat grass-like, obtuse, entire, and usually with very minute aculeate teeth on the margin, obscurely 3-nerved, striate, smooth, thin, deep green. *Pistillate flowers* on interfoliaceous scape-like *peduncles* 9 to 18 inches, or more, in length (varying with the depth of water),—the peduncle slender and filiform, or a little thickened towards the flower, flexuose rather than spiral, floating, with the flower at or near the surface, *spathe* about half an inch long, tubular, embracing the ovary, bifid, membranaceous; *perianth* whitish, with tinges of purple, 3 outer segments ovate, the 3 inner ones linear, very small; *ovary* inferior, about 3 fourths of an inch long, and scarcely a line wide, linear, somewhat compressed, or ancipital, with keel-like margins, mostly of a dingy greenish purple.

Hab. Slow-flowing waters of the Brandywine: frequent. *Fl.* August. *Fr.*

Obs. I have not yet observed the staminate plant. The pistillate ones are numerous, and obvious enough at the season of flowering, in the waters of the Brandywine, and other considerable streams. *Wilson*, in his Ornithology, says the *roots* of this plant are the favorite food of the *Canvass-back Duck*,—to which the peculiarly delicate flavor of the flesh of that bird has been ascribed. The *leaves* which are usually procumbently floating, afford a hiding-place for Eels,—whence one of its common names. It is the only species in the U. States; and probably, as *Pursh* suggested, not specifically distinct from the European V. *spiralis*.

447. SALIX. *L. Nutt. Gen.* 780.

[Celtic, *Sal*, near, and *Lis*, water; alluding to their place of growth.]

STAMINATE FL. *Aments* cylindric; *scales* imbricated, 1-flowered. *Perianth* 0. *Stamens* 2 to 5, with a nectariferous gland at base. PISTILLATE FL. *Aments* cylindric; *scales* imbricated, 1-flowered. *Perianth* 0. *Ovary* lance-ovoid, acuminate, with a nectariferous gland at base; *stigmas* 2, often bifid. *Capsule* 1-celled, 2-valved; valves acuminate, the beaks finally revolute. *Seeds* numerous, minute, comose.

Trees, or shrubs, rarely suffruticose: leaves alternate, mostly stipular; flowers in axillary and terminal aments. *Nat. Ord.* 84. *Lindl.* SALICINEÆ.

† *Leaves entire, or obsoletely serrate.*

1. S. RECURVATA, *Pursh.* Leaves lance-obovate, acute, very entire, silky pubescent when young, finally smooth, glaucous beneath; stipules caducous; scales black at apex, pilose, the hairs as long as the ovary; ovaries silky-pubescent, on short pedicels; style very short; stigmas bifid. *Beck, Bot. p.* 318.

RECURVED SALIX.

Stem 2 to 3 feet high, slender, with a greenish-brown bark, branched,—the branches somewhat pubescent when young, finally smooth; *buds* tawny. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to near an inch wide, more or less obovate, acute, and sometimes with a short abrupt acumination; *petioles* about a line in length; *stipules* small, ovate-lanceolate, or oblong, caducous. *Aments* appearing before the leaves, the *pistillate* ones about an inch long, finally recurved; *capsules* minutely pubescent, tawny, the silky *pappus* which crowns the seeds long and copious.

Hab. Woodlands; Mica-slate hills: not very common. *Fl.* April. *Fr.* May.

Obs. Collected by D. Townsend, Esq. in 1829.

†† *Leaves remotely and obtusely serrate.*

2. S. conifera? *Wangenh.* Leaves oblong and obovate-lanceolate, mostly acute, subserrate, strongly veined and cinereous-tomentose beneath; stipules obliquely ovate-lanceolate, subdentate; young branches densely villose; ovaries acuminate, pubescent, pedicellate; stigmas 2-lobed. *Beck? Bot. p.* 319.
S. humilis? *Marsh. Arbust. p.* 140.
S. Muhlenbergiana. *Florul. Cestr. p.* 108. Not of *Willd.* &c.

Cone-bearing Salix.

Stem 3 to 5 feet high, with a dingy or dark greenish-brown bark, much branched,—the young branches densely clothed with a soft cinereous tomentum, or villus; *buds* villose,—the terminal ones often enlarged into cones, from the punctures of insects. *Leaves* an inch and half to 3 or 3 and a half inches long, and half an inch to an inch wide, lance-oblong, generally inclining to oblanceolate, acute (those near the base of the branches often obovate-oblong, or elliptic, and obtuse), remotely and obsoletely serrate, often entire, and the margin slightly revolute, the upper surface green and finally smooth, except on the midrib which is pubescent, the under surface prominently and somewhat rugosely veined, and more or less densely clothed with a cinereous tomentose pubescence, the base mostly acute, and often cuneate; *petioles* 1 line to 1 third of an inch long, tomentose; *stipules* 3 or 4 lines long, obliquely ovate-lanceolate, or semicordate, acuminate, mostly dentate, sometimes entire. *Aments* appearing before the leaves, the *pistillate* ones about an inch long; *capsules* tawny, pubescent, the *pappus* long and copious.

Hab. Low grounds; borders of thickets: frequent. *Fl.* April. *Fr.* May.

Obs. Mr. Nuttall and Dr. Pickering both pronounced this to be S. *conifera*; yet I think there is some confusion and obscurity about that species. Several of the Willows are subject to have the terminal buds converted into cones,—particularly the S. *longirostris*, of this work; and I have collected unusually large cones on two other species, at the Falls of Niagara. If the present plant be the genuine S. *conifera*, our American Botanists are mostly wrong, I apprehend, in quoting S. *longirostris*, *Mx.* as a Synonym.

3. S. longirostris, *Mx?* Leaves narrow, cuneate-oblanceolate, acute at each end, nearly entire, with the margin revolute, strongly veined beneath, cinereous-pubescent on both sides, finally smoothish above; stipules none, or caducous; young branches pubescent; ovaries pedicellate, acuminate; style elongated; capsules diverging, long-beaked. *Mx. Am.* 2. *p.* 226.

Long-beaked Salix.

Stem 1 to 2 or 3 feet high, slender, often decumbent, much branched, with a dingy dark-green, or sometimes yellowish, bark,—the young branches clothed with a fine short cinereous pubescence; *buds* pubescent, the terminal ones often enlarged into truncated cones,—or more frequently the cones are inverted, or turbinate. *Leaves* 1 to 2 inches long, and 1 sixth to half an inch wide, acute at each end, broadest near the apex, and cuneately tapering to the base; *petioles* very short (scarcely a line in length), pubescent; *stipules* none? or, if any, very caducous. *Aments* preceding the leaves, the *pistillate* ones half an inch to 3 quarters in length; *scales* obovate, silky-pilose, blackish at apex; *ovaries* slender, acuminately tapering to the apex, and terminating in a distinct style, densely cinereous-pubescent, on *pedicels* nearly twice as long as the scales; *capsules* with a long acumination, diverging, pubescent, finally tawny.

Hab. Mica-slate hills; woodlands, and thickets: frequent. *Fl.* April. *Fr.* May.

Obs. This is the S. *longirostris*, of *Muhlenberg's Herbarium*, and probably of *Michaux*. It is the most humble and dwarfish of any of our Chester County Willows; and although I confounded it with the preceding, in my Catalogue, I now think it quite distinct. Mr. *Nuttall* avers that it is closely allied to S. *repens*, and S. *rosmarinifolia*,—and I incline to the opinion, myself, that it may be the S. *rosmarinifolia*, of *Pursh, Ell.* &c. but it does not quite agree with my European specimens of that plant.

4. S. DISCOLOR? *Willd.* Leaves lance-oblong, or elliptic-lanceolate, acute at each end, remotely and obsoletely undulate-serrate, smoothish, glaucous beneath; stipules lanceolate, subdentate, decidous; young branches slightly pubescent; aments sub-coætaneous; ovaries subsessile, tomentose. *Beck, Bot. p.* 320.

Also? S. prinoides. *Pursh, Torr. Beck,* &c.

TWO-COLORED SALIX.

Stem 6 to 10 feet high, with a yellowish-brown bark, branched, branches virgate, slightly pubescent when young. *Leaves* 3 or 4 inches long, and 3 fourths of an inch to an inch wide, oblong-lanceolate, sometimes rather oblanceolate, acute, or subacuminate, smooth and yellowish-green above, glaucous beneath, veined, and clothed, when young, with a short whitish deciduous pubescence, finally smooth; *petioles* 2 to 4 lines long, pubescent when young, finally smooth; *stipules* lanceolate, denticulate, or entire, shorter than the petioles.

Hab. Low grounds; North of West Chester: not common. *Fl.* April. *Fr.*

Obs. Mr. *Nuttall* called this S. *discolor;* but the *leaves* are not quite so *serrate* as those of the specimen so named in *Muhlenberg's Herbarium*. They have some resemblance in *form and size* to those of No. 2; but in other respects the plant is quite different. I have not yet seen it in flower, nor fruit. It was collected by D. TOWNSEND, Esq. in 1830.

† † † *Leaves closely and acutely serrate.*

5. S. NIGRA, *Marsh.* Leaves lanceolate, acute at each end, serrulate, smoothish and green on both sides, the petiole, and midrib above, tomentose; stipules small, obliquely ovate, caducous; aments coætaneous, villose; scales oblong; filaments 3 to 6, bearded at base; ovaries smooth, pediccllate; style short. *Beck, Bot. p.* 320. (Not of *Florul. Cestr.*) ICON, *Mx. f. Sylva,* 3. *tab.* 126. *fig.* 1.

S. caroliniana. *Mx. Am.* 2. *p.* 226.

BLACK SALIX.

Stem 15 to 20 feet high, and 8 to 12 or 15 inches in diameter, often crooked, or leaning, with a dark-colored rough bark, branched,—the branches brittle at base, somewhat pubescent and mostly dark purple when young. *Leaves* about 3 inches long, and half an inch to 3 quarters wide, lanceolate, very acute, or with a slender acumination, pubescent when young, finally smooth except on the midrib above, of nearly the same color on both sides; *petioles* 1 to 2 or 3 lines long, very pubescent; *stipules* small, obliquely ovate, minutely serrulate, very caducous. *Staminate aments* an inch and half to 2 inches long, tomentose; *filaments* 3 to 6, usually 5, pilose at base; *anthers* yellow. *Pistillate aments* about an inch long; *scales* lance-oblong, obtuse, pilose and ciliate with cinereous hairs; *ovaries* smooth, on short pedicels.

Hab. Low grounds; along streams: frequent. *Fl.* April—May. *Fr.*

Obs. This species has been found in several places, by D. Townsend, Esq. and Mr. Geo. W. Hall. The plant intended by S. *nigra*, in my Catalogue, is believed to be an introduced species,—the S. *Russelliana*, of the present work.

6. S. lucida, *Muhl.* Leaves ovate-oblong, or elliptic, cuspidate-acuminate, glandular-serrate, smooth and shining green on both sides; stipules roundish-ovate, or oblong, serrate; aments coætaneous; scales lanceolate, obtuse, pilose at base, smooth and serrate at apex; ovaries lance-subulate, smooth; style short. *Beck, Bot. p.* 321. Icon, *Mx. f. Sylva*, 3. *tab.* 125. *fig.* 3.

Shining Salix.

Stem 8 to 12 or 15 feet high, branched, the branches smooth, with a shining yellowish-brown bark; *buds* lance-oblong, smooth, tawny. *Leaves* 2 to 4 inches long, and 3 fourths of an inch to an inch or more in width, generally elliptic, or lance-oval, with a conspicuous acumination, rather acute at base, sometimes a little rounded or obtuse, finely serrate with the serratures glandular, smooth and shining, paler green beneath; *petioles* 1 fourth to half an inch long, smooth; *stipules* varying from roundish-ovate to oblong, and often subreniform, serrate, smooth, sessile, or sub-petiolate.

Hab. Along Brandywine, near Downingtown: rare. *Fl.* May. *Fr.*

Obs. I am indebted for my only Chester County specimen of this, to Mr. Joshua Hoopes,—who collected it near Downingtown, in 1828. I have not yet met with it, either in flower or in fruit,—nor have I seen any specimen with the leaves so large as that figured in *Michaux's Sylva*. It has some resemblance, as *Pursh* remarks, to the S. *amygdalina*, of Europe,—but is still more nearly allied to S. *pentandra*:—indeed, Mr. *Borrer* (*fide Hook.*) doubts if our S. *lucida* be distinct from the European S. *pentandra*.

7. S. Purshiana, *Spreng.* Leaves very long, linear-lanceolate, gradually attenuate to the apex, subfalcate, acute at base, finely dentate-serrate, smooth on both sides, silky-pubescent when young; stipules somewhat lunate, or obliquely reniform-cordate, dentate, reflexed; ovaries smooth, pediccllate; style short. *Beck, Bot. p.* 320.

S. falcata. *Pursh, Am.* 2. *p.* 614. *Florul. Cestr. p.* 109. *Lindl. Ency. p.* 822.

S. cordata, *var.* falcata. *Torr. Comp. p.* 370.

Pursh's Salix.

Stem 4 to 6 feet high, with long slender smooth branches. *Leaves* 2 or 3 to 6 or 7 inches long, and 1 third to 3 fourths of an inch wide, tapering gradually to a very acute apex, and more or less falcate or curved laterally, mostly acute at base, smooth and green on both sides; *petioles* 2 to 4 lines long, smooth; *stipules* ob-

liquely reniform-cordate, dentate, smooth, subpetiolate, mostly reflexed, large on the young branches. *Pistillate aments* an inch and half to 2 inches long; *capsules* ovoid, acuminate, smooth, brownish-tawny, distinctly pedicellate; *rachis* slightly villose.

Hab. Swamps, and margins of ponds: frequent. *Fl.* April—May. *Fr.* June.

Obs. I was mistaken in giving the *size* of this species, in my Catalogue. I think I have never seen it more than 4 to 6 feet high:—nor have I noticed the staminate plant.

8. S. GRISEA, *Willd.* Leaves lanceolate, acuminate, serrulate, smooth above, silky beneath; stipules ovate-oblong, subdentate, caducous; aments preceding the leaves; ovaries ovoid-oblong, silky-pubescent, on short pedicels; stigmas subsessile. *Beck, Bot. p* 321.
S. sericea. *Marsh. Arbust. p.* 140.

GREY SALIX.

Stem 4 to 6 feet high, with slender dark greenish-brown branches, which are cinereous-pubescent when young, and brittle at base. *Leaves* 2 to 4 inches long, and half an inch to an inch wide, lanceolate, acute, or acuminate, serrulate, smooth above except on the midrib, which is cinereous-pubescent, clothed beneath with an appressed silky pubescence which is of a silvery glaucous hue; *petioles* 2 to 4 or 6 lines long, pubescent; *stipules* ovate-oblong (linear, *Willd. Torr. Beck,*) denticulate, silky, caducous. *Staminate aments* about half an inch long; *scales* ovate-oblong, black at apex, villose; *anthers* fuscous, or greenish-brown. *Pistillate aments* about an inch long; *capsules* ovoid-oblong, silky-pubescent, pale tawny with tinges of green.

Hab. Low grounds; swampy thickets: frequent. *Fl.* April. *Fr.* May.

Obs. I received, from the late Mr. *Schweinitz*, a specimen of this, labelled by him, S. *discolor.*

9. S. RUSSELLIANA? *Sm.* Leaves lanceolate, acuminate, serrate, acute at base, smooth, paler and somewhat glaucous beneath; aments coætaneous; ovaries ovoid-subulate, smooth, pedicellate; style elongated. *Willd. Sp.* 4. *p.* 656.
S. nigra. *Florul. Cestr. p.* 109. Not of *Marsh.* &c.

RUSSELL'S, OR DUKE OF BEDFORD'S SALIX.

Stem 20 to 40 or 50 feet high, and 1 to 2 feet in diameter, branched,—the branches with a dark greenish-brown smooth and shining bark, somewhat pubescent when young, brittle at base. *Leaves* 2 to 4 inches long, and half an inch to near an inch wide, lanceolate, acute at each end, the apex mostly tapering to a slender acumination, serrate, mostly smooth, green above, paler and more or less glaucous beneath, silky-pubescent when young; *petioles* 2 to 6 lines in length, somewhat pubescent; *stipules* small, caducous. *Pistillate aments* 2 to 2 and a half inches long, loose; *scales* linear-lanceolate, pubescent and ciliate at base, membranous and tawny, deciduous; *ovaries* on short pedicels, slender and tapering to the apex, smooth, with a distinct *style*, and 2-lobed *stigma; rachis* pubescent. *Capsules* of a dingy tawny-green color.

Hab. Low grounds; along Brandywine: frequent. *Fl.* April—May. *Fr.* June.

Obs. This is evidently an introduced Willow,—and seems to be the S. *Russelliana*, of England. It is naturalized to a considerable extent, along the Brandywine; and has been sometimes advantageously cultivated, in low swampy grounds.

I have not yet met with any but the *pistillate* plant. The prevailing dark green huo of this species, and my limited acquaintance with the genus, when my Catalogue was published, led me to insert it in that work by the erroneous name of S. *nigra*. Dr. *Beck* cites it as a Synonym of his S. *decipiens;* but in this I think there must be a mistake.

10. S. VITELLINA, *L.* Leaves lanceolate, acute, glandular-serrulate, or nearly entire, smoothish above, silky beneath; aments cœtaneous; ovaries ovoid-lanceolate, smooth, subsessile; style short. *Beck, Bot. p.* 322.

EGG-YOLK SALIX. *Vulgò*—Yellow Willow. Common Willow. *Gallicè*—Le Saule. *Germanicè*—Die Weide. *Hispanicè*—Sauce.

Stem 20 to 30 or 40 feet high, and 1 to 2 feet in diameter, with numerous rather erect branches, and a smooth shining orange-yellow (or sometimes pale greenish-yellow) bark. *Leaves* 2 to 3 inches long, and half an inch to 3 quarters wide, generally lanceolate, acute, and with indistinct cartilaginous glandular serratures, —not unfrequently obovate-oblong, obtuse, and entire (especially when young, or the early ones at the base of the young branches),—silky-pubescent, finally smooth and yellowish-green above, silky and glaucous beneath; *petioles* 1 to 2 lines long, pubescent; *stipules* minute, lance-ovate, caducous (none, *Pursh, Beck*, &c.). *Pistillate aments* 2 to 2 and a half inches long; *scales* ovate-lanceolate, externally pubescent, and pilose-ciliate; *ovaries* ovoid-lanceolate, smooth, on very short pedicels; *rachis* pubescent.

Hab. About houses; meadows, and low grounds: frequent. *Fl.* April. *Fr.* June.

Obs. This was early introduced, here, as a shade tree; and has become partially naturalized, in many places. I think I have never seen any but the *pistillate* plant. A variety, with paler bark (perhaps the S. *alba*, of Authors) is also occasionally to be met with. The handsome S. *babylonica*, or Weeping Willow, is more generally preferred as an ornamental Shade tree,—and the pistillate plant of that species is extensively propagated about houses; but it can hardly be said to be naturalized. Some 20, or more, additional species of this large and very difficult genus, have been enumerated in the U. States.

[Fraxinus. *Diandria Monogynia.*]

Order 4. Tetrandria.

448. VISCUM. *L. Nutt. Gen.* 786.

[Latin, *Viscus*, glue, or birdlime; in allusion to its glutinous fruit.]

STAMINATE FL. *Calyx* 0. *Corolla* 3 or 4-parted; lobes dilated at base, triangular, fleshy, valvate in æstivation. *Anthers* adnate to the corolla, many-celled. PISTILLATE FL. *Calyx* adnate to the ovary, with the limb entire, or obsolete. *Petals* 4, minute. *Ovary* inferior; *stigmas* sessile, obtuse. *Berry* 1-seeded.

Shrubby and parasitic: leaves mostly opposite, entire, veinless, subcoriaceous, without stipules; flowers mostly in axillary spikes, or clusters. *Nat. Ord.* 192. *Lindl.* LORANTHACEÆ.

1. V. FLAVESCENS, *Pursh.* Branches terete, opposite, and decussate; leaves elliptic-obovate, obtuse, 3-nerved; spikes interrupted, axillary, solitary, rather shorter than the leaves. *Beck, Bot. p.* 155. Not *V. flavens, Willd. and DC.*

V. purpureum (*var.*). *Marsh. Arbust. p.* 163. Not ! of *Willd. & Pers.* V. album. *Muhl. Catal. p.* 91. Not of *Willd. Pers. Ait. and DC.* V. verticillatum. *Nutt. Gen.* 2. *p.* 235. *Ell. Sk.* 2. *p.* 677. *Florul. Cestr. p.* 109. *Torr. Comp. p.* 372. *Eat. Man. p.* 395. Not ? of *Willd. and Pers.*

Yellow Viscum. *Vulgò*— Misseltoe.

Plant perennial, yellowish green, smooth. *Root* none observable. *Stem* 9 to 18 inches high (inserted on the branches of trees,—generally producing a tumor in the sustaining branch), terete, much branched, the branches opposite and decussate, clothed with a cellular bark which appears to be horizontally incised, or sulcate (as if articulated), at the ramifications. *Leaves* 3 fourths of an inch to an inch and half long, and 1 third to 3 fourths of an inch wide, more or less obovate, often nearly elliptic, and sometimes a little cuneate, obtuse, very entire, 3-nerved beneath, smooth, fleshy or subcoriaceous, narrowed at base to a thickish terete *petiole* 1 or 2 lines in length. *Flowers* small, yellowish-green, sessile, verticillate, or clustered on short axillary spikes,—the *staminate* flowers mostly 3-parted. *Berries* subglobose, of a pearly white (resembling white wax) when mature,—the pulp gummy, or viscid.

Hab. Branches of trees (mostly on *Nyssa multiflora*): rare. *Fl.* [May. *Pursh.*] *Fr.*

Obs. This plant has become nearly extinct in Chester County ; but I understand a few specimens yet occur in the South western part of the County. It is not uncommon in New Jersey, and Maryland ; and is generally restricted to the *Sour Gum* (*Nyssa multiflora*),—though Mr. Joshua Hoopes informs me he has seen it, in New Jersey, growing on the *Red Maple* (*Acer rubrum*). It is the only species known in the U. States.

[Ilex opaca. *Tetrandria Tetragynia.*]

[Morus. Urtica dioica. Boehmeria cylindrica. *Monoecia Tetrandria.*]

☞ The *staminate plants* of *Broussonetia papyrifera, Vahl*, or *Paper Mulberry*, have been introduced here as shade trees, and are almost *naturalized*, by the extension of the *roots*,—which send up numerous *suckers*, and are often very troublesome in yards and gardens.

Order 5. Pentandria.

449. HUMULUS. *L. Nutt. Gen.* 792.

[Latin, *Humus*, moist earth ; in allusion to its place of growth.]

Staminate Fl. *Perianth* single, 5-leaved, or deeply 5-parted. *Anthers* opening by 2 pores at summit. Pistillate Fl. in ovoid-oblong cones, or *aments ; scales* large, membranous, entire, imbricated, 1-flowered, persistent. *Perianth* 0 ? (or membranous, and closely embracing the ovary). *Styles* 2, subulate. *Seed* (or *Nut*) 1, invested with a membranous coat.

Herbaceous : stem twining with the sun ; leaves mostly opposite, 3-lobed, stipular ; flowers axillary,—the staminate ones loosely paniculate, the pistillate ones in ovoid-oblong imbricated pedunculate spikes, or aments. *Nat. Ord.* 78. *Lindl.* Urticeæ.

1. H. Lupulus, L. *Leaves cordate, mostly* 3-*lobed, scabrous, petiolate.* Beck, Bot. p. 315.

Vulgò—*Hop. Hop-vine.*

Gallicè—*Houblon.* Germanicè—*Der Hopfen.* Hisp.—*Hombrecillo.*

Root *perennial, branching.* Stem 10 *to* 15 *or* 20 *feet long, several from the same root, slender, volubile* (*twining constantly* with the Sun, *or* East-South-West), *somewhat angular, and mostly twisted, aculeately and retrorsely scabrous, branching above.* Leaves 3 *to* 5 *inches long, and* 2 *to* 4 *inches wide, generally opposite, cordate at base, 3-lobed, acuminate and serrate,—the upper ones often alternate, and not lobed,—all very scabrous on the upper surface, sprinkled with resinous particles beneath;* petioles 1 *to* 2 *or* 3 *inches long;* stipules *linear-lanceolate, acuminate, striate, membranous.* Staminate flowers *greenish, in oblong panicles terminating the axillary branches;* peduncles *opposite, somewhat cymosely subdivided, bracteate at base;* bracts *resembling the stipules.* Pistillate flowers *in pendulous ovoid-oblong* aments, *which are usually very numerous,* 1 *to* 2 *inches long, and about an inch in diameter;* scales *foliaceous, or membranous, nerved and slightly pubescent, ovate* (*the lower ones acuminate*), *imbricated, embracing the floret, at base, in the infolded margin, and thickly sprinkled with reddish-orange-colored resinous particles which are highly bitter and aromatic.* Seed *roundish-ovoid, coated with a tawny membrane* (*—or rather, perhaps, a* nut, *with a thin shell, and invested with a persistent truncate perianth*).

Hab. *Gardens, &c. common.* Fl. *July.* Fr. *September.*

Obs. *This plant—the only known species of the genus,—is undoubtedly indigenous, here,—as I have often seen both staminate and pistillate ones growing in the thickets along the Brandywine. The* pistillate plant *is very generally cultivated for its proverbially bitter and numerous* cones, *or* aments, *which are so valuable in brewing. These aments also afford a good anodyne tincture; and make an excellent antiseptic cataplasm, for gangrenous or ill-conditioned sores.*

450. CANNABIS. *L. Gen. Pl.* 1522.

[An ancient Greek name; of obscure etymology.]

Staminate Fl. *Perianth* single, 5-parted. Pistillate Fl. *Perianth* single, oblong-ovoid, acuminate, opening longitudinally on one side. *Styles* 2, long, subulate. *Nut* ovoid, slightly compressed, 2-valved, inclosed in the persistent perianth.

Herbaceous: leaves mostly opposite, digitate, stipular; flowers axillary,—the staminate ones corymbose-paniculate, the pistillate ones sessile. *Nat. Ord.* 78. *Lindl.* Urticeæ.

1. C. sativa, L. *Leaves petiolate, digitate; leaflets* 5 *to* 7, *lanceolate, serrate.* Beck, Bot. p. 315.

Cultivated Cannabis. Vulgò—*Hemp. Neck-weed.*

Gallicè—*Le Chanvre.* Germ.—*Der Hanf.* Hispanicè—*Cañamo.*

Root *annual.* Stem 5 *to* 8 *or* 10 *feet high, obtusely angular and sulcate, pubescent, often branched.* Leaves *digitate, opposite* (*the upper ones often alternate*); leaflets *usually* 5, *sometimes* 7, 3 *to* 5 *inches long,* 1 *fourth to* 2 *thirds of an inch wide* (*the* 2 *outside or lateral ones much smaller than the others, and often entire, especially in the staminate plant*), *lanceolate, tapering and acute at each end, serrate, scabrous on the upper surface, minutely pubescent beneath, sessile;* common petioles 1 *to* 2 *or* 3 *inches long, pubescent;* stipules *lanceolate.* Staminate flowers *greenish, in loose pedunculate axillary clusters, rather crowded into a kind of dense panicle at summit.* Pistillate flowers *axillary, sessile, mostly in pairs;* perianth *subglobose, with a lance-linear acumination, nerved, pubescent, green, slit on one side;* styles *long, slender, densely pubescent, and somewhat tawny.* Nut *ovoid, a*

little compressed, smooth, greenish, reticulated with whitish veins, embraced by the persistent perianth.

Hab. *Fields: not common.* Fl. *June.* Fr. *August.*

Obs. *This valuable plant was formerly cultivated to some extent, in this County; but it is now rarely to be seen, here. It requires a rich soil,—and seems to answer better in the new and fertile lands of the West. It is the only known species of the genus.*

451. SPINACIA. *L. Gen. Pl.* 1520.

[Latin, *Spina*, a thorn; the integument of the seed being often prickly.]

Staminate Fl. *Perianth* single, 5-parted. Pistillate Fl. *Perianth* single, roundish-ovoid, 2 to 4-cleft, sometimes muricate at summit. *Styles* 4, capillary. *Nut* roundish-ovoid, somewhat compressed, inclosed in the persistent indurated and sometimes muricate perianth.

Herbaceous: leaves alternate, without stipules; flowers axillary, glomerate,—the staminate ones in racemose paniculate clusters. *Nat. Ord.* 153. *Lindl.* Chenopodeæ.

1. S. oleracea, L. *Leaves hastate-lanceolate, often incised at base, petiolate; fruit sessile, prickly, or unarmed.* Willd. Sp. 4. p. 766.

Pot-herb Spinacia. Vulgò—*Spinach, or Spinage.*

Gall.—*Epinard des potagers.* Germ.—*Der Spinat.* Hisp.—*Espinaca.*

Root *annual.* Stem 18 *inches to* 2 *feet high, striate, smoothish, somewhat branching, or often simple.* Leaves 2 *to* 3 *or* 4 *inches long, and* 3 *fourths of an inch to an inch and half wide, oblong-lanceolate, acute, entire, or repand on the margin, with an acuminate hastate lobe on each side, near the base (the lower leaves often inclining to elliptic-lanceolate, and not hastate), roughish-dotted, cuneately tapering to a* petiole 1 *to* 3 *or* 4 *inches in length.* Flowers *greenish,—the* staminate *ones in small pedunculate clusters, forming, altogether, a kind of terminal racemose panicle, the* pistillate *ones in dense axillary clusters, pedunculate, or sessile.* Fruit *inclosed in the subglobose persistent* perianth, *which is scarcely cleft, at maturity, and smoothish or not muricate, in the variety usually cultivated.*

Hab. *Gardens: not common.* Fl. *June—July.* Fr. *August—Sept.*

Obs. *The* leaves *of this plant are a well known pot-herb—for which purpose it is sometimes cultivated, in this County. There are no native species in the U. States.*

[Vitis. Nyssa. *Pentandria Monogynia.*]

[Panax trifolium. Rhus. *Pentandria Trigynia.*]

[Acer Negundo. *Octandria Monogynia.*]

Order 6. Hexandria.

452. SMILAX. *L. Nutt. Gen.* 793.

[Greek, *Smile*, a grater; in reference to its prickles.]

Staminate Fl. *Perianth* campanulate, deeply 6-parted. *Anthers* adnate to the filaments. Pistillate Fl. *Perianth* as in the staminate flowers. *Ovary* superior; *styles* 3, minute. *Berry* globose, 3-celled, 1, 2, or 3-seeded.

Suffruticose, or herbaceous: often climbing; leaves alternate, cirrhose-stipular or the petiole producing a tendril on each side near the base; flowers in axillary pedunculate umbels. *Nat. Ord.* 249. *Lindl.* SMILACEÆ.

† *Stem suffruticose, prickly.*

1. S. ROTUNDIFOLIA, *L.* Stem subterete; leaves orbicular-ovate, acuminate, sub-cordate at base; common peduncles scarcely longer than the petioles. *Beck, Bot. p.* 356.

ROUND-LEAVED SMILAX. *Vulgò*—Green Brier. Rough Bind-weed.

Plant smooth, yellowish-green. *Stem* 10 to 20 or 30, and sometimes 50, feet long, slender, mostly terete, flexuose, somewhat branched, armed with straight rigid sharp prickles, and climbing by tendrils. *Leaves* 2 to 3 inches long, and often as wide as long, orbicular-ovate, with a short acumination, generally a little cordate at base, entire, 5-nerved, paler and somewhat glaucous beneath; *petioles* 1 third to 3 fourths of an inch long, striate and margined at base, and giving out a simple filiform but strong *tendril* on each side, at the summit of the margin. *Flowers* yellowish-green, in small globose axillary umbels,—the *common peduncle* scarcely longer than the petioles. *Berries* dark blue, or bluish-black, with a glaucous bloom when mature.

Hab. Moist thickets, and woodlands: frequent. *Fl.* June. *Fr.* October.

Obs. This rugged shrubby vine is often abundant in moist grounds, forming impenetrable thickets,—and is a great annoyance to the woodmen, when employed in clearing out such places.

2. S. CADUCA, *L.* Stem somewhat angular; leaves ovate, mucronate, or sub-acuminate; common peduncles longer than the petioles. *Beck, Bot. p.* 356.

CADUCOUS SMILAX. *Vulgò*—Green Brier.

Plant smooth, yellowish-green, often tinged with purple. *Stem* 3 or 4 to 8 or 10 feet long, slender, terete, or often a little angular, flexuose, simple, or branched, sub-procumbent, leaning, or supporting itself by tendrils. *Leaves* 2 to 2 and a half inches long, and an inch and half to 2 inches wide, ovate, mucronate, or with a slight acumination, entire, 5-nerved, subglaucous beneath, and often with a purplish tinge; *petioles* about half an inch long, striate, margined at base, with a *tendril* on each side at the summit of the margin. *Flowers* yellowish-green, in small axillary umbels,—the *common peduncle* generally about twice as long as the petioles. *Berries* bluish-black when mature.

Hab. Thickets, neglected fields, &c. frequent. *Fl.* May--June. *Fr.* October.

Obs. This is nearly allied to the preceding. It is often abundant in sterile neglected old fields, on the Mica-slate hills.

† † *Stem herbaceous, unarmed.*

3. S. HERBACEA, *L.* Stem angular, simple, erect, or nodding; leaves oblong-cordate, or ovate, acuminate, pubescent beneath; common peduncles of the pistillate umbels longer than the leaves. *Beck, Bot. p.* 357.

Also ? S. pulverulenta. *Mx. Am.* 2. *p.* 238.

S. peduncularis. *Bigel. Bost. p.* 368. Also ? *Willd. Sp.* 4. *p.* 786. *Pers. Syn.* 2. *p.* 620. *Ait. Kew.* 5. *p.* 391. *Muhl. Catal. p.* 92. *Pursh, Am.* 1. *p.* 251. *Nutt. Gen.* 2. *p.* 238. *Bart. Phil.* 2. *p.* 195.

Ell. Sk. 2. *p.* 702. *Torr. Comp. p.* 374. *Lindl. Ency. p.* 838. *Beck, l. c. Eat. Man. p.* 343.

Herbaceous Smilax. *Vulgò*—Carrion-flower.

Root perennial. *Stem* 2 to 4 or 6 feet long, erect, or leaning, often flaccid at summit and nodding, mostly simple (or with a few slender cirrhose axillary branches, bearing a few small leaves at or near the summit), angular, smooth, frequently purple. *Leaves* 2 to 3 inches long, and 1 to 2 inches wide, cordate, or sometimes lance-ovate, acuminate, entire, mostly 7-nerved, smooth above, with a short pubescence on the nerves and veins beneath; *petioles* an inch to an inch and half long, margined at base, with a long *tendril* on each side at the summit of the margin. *Flowers* yellowish-green, of an intolerably fœtid and carrion-like odor, numerous, in globose axillary umbels about an inch in diameter,—the *common peduncles* long, compressed,—those of the *staminate umbels* scarcely as long as the leaves (2 or 3 inches long),—those of the *pistillate umbels* longer than the leaves (5 or 6 inches long). *Berries* bluish-black when mature.

Hab. Meadows; fence-rows, &c. frequent. *Fl.* May—June. *Fr.* Sept.

Obs. There is no difficulty in recognizing this plant by the abominable fœtor of its flowers,—which is so strong as frequently to deceive the carrion flies. The offensive odor, however, is completely dissipated by drying. I have a suspicion that the S. *pedunculuris*, of Authors, is nothing more than a *variety* of this. Ten or twelve additional species are enumerated in the U. States.

453. DIOSCOREA. *L. Nutt. Gen.* 794.

[Dedicated to the memory of the ancient Greek Naturalist, *Dioscorides.*]

Staminate Fl. *Perianth* 6-parted; segments lance-ovate, spreading. Pistillate Fl. *Perianth* as in the staminate flowers. *Ovary* inferior, oblong, 3-angled, angles winged; *styles* 3. *Capsule* 3-winged, 2 or 3-celled; cells 2-seeded. *Seeds* compressed, membranaceously margined.

Herbaceous: stem volubile; leaves mostly alternate and simple, without stipules; flowers axillary, racemose, or paniculate. *Nat. Ord.* 250. *Lindl.* Dioscoreæ.

1. D. villosa, *L.* Leaves alternate, sub-opposite, and verticillate, cordate, acuminate, pubescent beneath. *Beck, Bot. p.* 355.

D. paniculata. *Mx. Am.* 2. *p.* 239.

Villose Dioscorea. *Vulgò*—Wild Yam.

Root perennial. *Stem* 6 to 10 or 12 feet long, slender, smooth, mostly simple, twining and climbing shrubs and fences. *Leaves* mostly alternate, sometimes subopposite, rarely in verticils of 4 at summit, 2 to 3 or 4 inches long, and an inch and half to near 3 inches wide, cordate, acuminate, entire, smooth above, generally pubescent and somewhat cinereous beneath, sometimes smooth and bluish-glaucous, 9 to 11-nerved,—the lateral nerves, especially in the staminate plants, often divided; *petioles* an inch and half to 2 and a half inches long, sulcate-angled, smooth. *Staminate flowers* pale green, small, in axillary *panicles*, disposed in small clusters on the branches of the panicles, the branches with small lanceolate *bracts* at base. *Pistillate flowers* in simple axillary pedunculate *racemes*, rather distant and subsessile on the common peduncle, minutely bracteate at base. *Capsules* about 3 fourths of an inch in length, and about as wide as long, often 2-celled by abortion, 3-angled, the angles dilated into broad semi-oval wings, the wings compressed, smooth, greenish-tawny, with a narrow dark-brown mar-

gin. *Seeds* much compressed, suborbicular, with a thin white shining membranaceous margin.

Hab. Fence-rows; thickets, &c. frequent. *Fl.* June—July. *Fr.* Octo.

Obs. There is another species (D. *quaternata*, *Walt.* D. *glauca*, *Muhl.*) enumerated in the U. States; but I suspect it is scarcely more than a variety of this.

[Prinos verticillatus. *Hexandria Monogynia.*]

[Helonias dioica. *Hexandria Trigynia.*]

Order 7. Octandria.

454. POPULUS. *L. Nutt. Gen.* 796.

[Latin, *Populus*, the people; being used to shade public walks.]

Staminate Fl. *Aments* cylindric; *scales* lacerately fringed at summit; *perianth* subturbinate, oblique, entire. Pistillate Fl. *Aments*, *scale* and *perianth*, as in the staminate flowers. *Ovary* superior; *style* very short, bifid; *stigmas* large, 2 or 3-lobed. *Capsule* 2-valved, almost 2-celled by the inflected margins of the valves.. *Seeds* numerous, minute, comose.

Trees: leaves alternate, stipular,—the petiole often laterally compressed, and biglandular, at summit; flowers in aments issuing from lateral buds. *Nat. Ord.* 84. *Lindl.* Salicineæ.

1. P. tremuloides, *Mx.* Leaves small, cordate-orbicular, abruptly acuminate, unequally dentate-serrulate, pubescent on the margin. *Beck, Bot. p.* 323. Icon. *Mx. f. Sylva.* 2. *tab.* 99. *fig.* 1.
P. tremula. *Marsh. Arbust. p.* 107. Not? of *L. Willd. Pers.* and *Lindl.*
P. lævigata. *Willd. Sp.* 4. *p.* 803. *Ait. Kew.* 5. *p.* 395. *Lindl. Ency. p.* 840. Also, *Pers. Syn.* 2. *p.* 623. Not? of *Pursh, Nutt. Beck, Eat.*
P. trepida. *Pursh, Am.* 2. *p.* 618. *Nutt. Gen.* 2. *p.* 239. Not? of *Willd. Pers. Ait. Muhl. Lindl.*

Tremula-like Populus. *Vulgò*—Quaking Asp. American Aspen.

Stem 30 to 50 feet high, and 6 to 12 or 15 inches in diameter, branched (when crowded, the stem pole-like, with few branches), the bark rather smooth and whitish, or cinereous, somewhat fissured on the stems of old trees. *Leaves* about 2 inches long, and rather wider than long, suborbicular and slightly cordate, with a short abrupt acumination, mostly without glands at base, smooth, the margin unequally dentate-serrulate, somewhat undulate, and fringed (especially when young) with white silky hairs; *petioles* 2 to 3 inches long, slender, smooth, subterete towards the base, laterally compressed, or vertically dilated, near the leaf, which disposes the leaf to be agitated by the slightest motion of the air; *stipules* small, subulate-lanceolate, pubescent, caducous. *Pistillate aments* large (3 to 4 or 5 inches long).

Hab. Low grounds; Brandywine, &c. not very common. *Fl.* April. *Fr.* May.

Obs. There is a considerable grove of this at Wynn's Meadows, near the sources of the Brandywine; but it is rather scarce in other parts of the County. The *bark* is a popular, and, I believe, valuable tonic. I have occasionally met with specimens, apparently of a *young poplar*,—with the leaves large, cordate, denticulate, tomentose beneath, and with 2 to 4 cup-like glands at base,—which I referred to P. *candicans*, in my Catalogue; but Dr. Pickering thinks they are only the young state of the present species.

2. P. GRANDIDENTATA, *Mx.* Leaves roundish-ovate, acute, coarsely sinuate-dentate, smooth, tomentose when young, mostly biglandular at base. *Beck, Bot. p.* 323. Icon, *Mx. f. Sylva,* 2. *tab.* 99. *fig.* 2.

P. trepida. *Willd. Sp.* 4. *p.* 803. *Ait. Kew.* 5. *p.* 395. *Muhl. Catal. p.* 92. *Lindl. Ency. p.* 840. Also, *Pers. Syn. p.* 623. Not of *Pursh,* and *Nutt.*

LARGE-TOOTHED POPULUS. *Vulgò*—Large Aspen.

Stem 30 or 40 feet high, and 12 to 18 inches in diameter, branched—when growing singly the top often bushy,—the bark smoothish, and greenish-grey, or cinereous. *Leaves* 3 to 4 or 5 inches long, and about as wide as long, roundish-ovate, acute, or sub-acuminate, the base very obtuse, truncate, or slightly cordate, coarsely and sub-equally sinuate-dentate, often, but not constantly, with 2 cup-like glands at the junction with the petiole, very tomentose when young, finally smooth; *petioles* 2 to 3 inches long, laterally compressed towards the leaf; *stipules* lance-oblong, tomentose, caducous. *Pistillate aments* 2 to 3 inches long.

Hab. Moist woodlands; not common. *Fl.* April. *Fr.* May.

Obs. This species is becoming rare in the vicinity of West Chester. *Willdenow* and *Lindley* seem to have confounded it with P. *monilifera, Ait.* which *Muhlenberg* thought was hardly distinct from P. *angulata* of *Aiton;* and I cannot help thinking that the P. *monilifera, Ait.* P. *canadensis, Mx. f.* and the P. *lævigata, Pursh,* are all confused *synonyms* of the P. *angulata,* or "*Cotton-wood,*" of the Valley of the Mississippi.

3. P. HETEROPHYLLA, *L.* Leaves roundish- and oblong- or deltoid-ovate, rather obtuse, often auriculately subcordate at base with the sinus small, uncinately dentate-serrate, very tomentose when young. *Beck, Bot. p.* 223.

P. argentea. *Mx. f. Sylva,* 2. *p.* 235 (Icon, *tab.* 97.).

VARIOUS-LEAVED POPULUS.

Stem 30 to 50 feet high, and 12 to 18 inches in diameter, with terete branches, and a greyish-brown bark, which is tomentose in the young growth. *Leaves* 3 or 4 to 7 or 8 inches long, and 2 or 3 to 6 or 7 inches wide (the larger ones on young plants), varying from roundish-ovate to oblong- or deltoid-ovate, rather obtuse, uncinate-serrate, the base often full or a little produced, slightly cordate and auriculate, finally smooth above, with some remains of pubescence beneath, when young densely clothed, on both sides, with a cinereous (or often slightly tawny) tomentum; *petioles* 2 to 4 or 5 inches long, pubescent, at first very tomentose; *stipules* linear-lanceolate, or lance-subulate, tomentose, deciduous.

Hab. Moist woodlands; E. Marlborough; not common. *Fl.* April. *Fr.*

Obs. This species occurs, of moderate size, in the woodlands and some moist thickets, near the residence of Messrs. *Samuel* and *Joshua Peirce,* in East Marlborough; but I have not met with it elsewhere,—nor have I yet had an opportunity to examine the flowers, or fruit. Five or six additional species are enumerated in the U. States; and two foreign species (viz. *staminate* plants of P. *dilatata,* or Lombardy Poplar,—and *pistillate* plants of P. *græca,* or Athenian Poplar) have been introduced, and propagated by cuttings, as ornamental shade trees, to a considerable extent,—especially the Lombardy Poplar. They are, however, not so much admired as formerly; and are gradually giving place to other trees.

Order 8. Enneandria.

455. UDORA. *Nutt. Gen.* 800.
[Greek, *Hydor*, or *Udor*, water; from its place of growth.]

Spathe bifid, 1-flowered. *Perianth* 6-parted, the 3 inner segments petaloid. STAMINATE FL. *Stamens* 9, 3 of them interior. PISTILLATE FL. *Tube* of the perianth very long and slender. *Sterile filaments* 3. *Utriculus* about 3-seeded. *Seeds* cylindric.

Herbaceous aquatics: submersed and floating, with the roots fixed; leaves entire, verticillate in threes or fours; flowers axillary, solitary. *Nat. Ord.* 231. *Lindl.* HYDROCHARIDEÆ.

1. U. CANADENSIS, *Nutt.* Leaves mostly verticillate in threes, elliptic-oblong and lance-linear, rather acute, very minutely serrulate; tube of the perianth filiform. *Beck, Bot. p.* 342.
Elodea canadensis. *Mx. Am.* 1. *p.* 20. *Torr. Comp. p.* 376. Not *Elodea* of *Pursh.*
Serpicula verticillata. *Muhl. Catal. p.* 84 Not of *Willd. Pers.* &c.
S. occidentalis. *Pursh, Am.* 1. *p.* 33.
S. canadensis. *Eat. Man. p.* 336.

CANADIAN UDORA.

Root perennial? *Stem* 3 or 4 to 8 or 10 inches long (varying with the depth of water), filiform, dichotomously and diffusely branching, smooth. *Leaves* 2 to 6 lines long, and about 1 line wide, varying from ovate-oblong and obtuse to lance-linear and acute, very minutely serrulate (under a lens), nerveless, smooth, green and shining, sessile, generally in verticils of three, and numerous on the stem,—giving the plant the appearance of an aquatic moss. *Flowers* emerging; *perianth* of a pale dingy-purple, or flesh-colored with a leaden tinge (white, *Pursh, Torr. Beck*), the *tube* very slender, half an inch to near an inch long.

Hab. Sluggish rivulets: frequent. *Fl.* July—August. *Fr.*

Obs. This occurs in still water, along the margin of the Brandywine and Schuylkill, and in their tributaries,—where it was collected by MR. JOSHUA HOOPES in 1828. I have not yet had an opportunity to examine the staminate flowers, nor the mature fruit. It is the only known species in the U. States,—if not of the genus.

[Laurus. *Enneandria Monogynia.*]

Order 10. Polyandria.

456. MENISPERMUM. *L. Nutt. Gen.* 804.
[Greek, *Mene*, the moon, and *Sperma*, seed; from the lunate form of the seeds.]

Sepals and *petals* arranged in fours, in 2 or 3 series. STAMINATE FL. *Stamens* 16 to 20; *anthers* 4-lobed, at the apex of the thickened or clavate filaments. PISTILLATE FL. *Ovaries* 2 to 4, superior, subpedicillate. *Drupe* baccate, roundish-reniform, with a single lunate *nut*, or seed.

Suffruticose: stem volubile; leaves alternate, petiolate, peltate, or cordate, palmate-nerved, without stipules; flowers in axillary or super-axillary pedunculate racemes. *Nat. Ord.* 23. *Lindl.* MENISPERMEÆ.

1. M. CANADENSE, *L.* Leaves peltate, subcordate, roundish-angled, often somewhat 3-lobed at apex, with the lobes mucronate ; racemes compound, solitary ; petals 8. *Beck, Bot. p.* 16.
Also, M. virginicum. *Willd. Sp.* 4. *p.* 824. *Pers. Syn.* 2. *p.* 627. *Ait. Kew.* 5. *p.* 404. *Muhl. Catal. p.* 93.

CANADIAN MENISPERMUM. *Vulgò*—Moon-seed.

Root perennial. *Stem* suffruticose, or rather herbaceous, annual, 8 to 12 or 15 feet long, slender, nearly simple, twining and climbing over shrubs and fences, terete, sulcate-striate, pubescent when young, finally smoothish, often purplish. *Leaves* 3 to 5 inches long and rather wider than long, roundish-angular, often cordate at base, and 3-lobed at apex, palmate-nerved, slightly pubescent on the nerves, thinnish, of a pale purplish-glaucous hue, with purplish nerves and veins ; *petioles* 3 or 4 inches long, slender, striate, finally smoothish, affixed to the under surface of the leaf, near its base. *Flowers* small, of a dingy yellowish-green tinged with purple,—the *staminate* ones in paniculate *racemes*, on solitary slender *peduncles* 2 or 3 inches in length, which are inserted a little above the axils of the leaves ; *pedicels* filiform, bracteate at base ; *petals* smaller than the sepals. *Fruit* a berry-like roundish-reniform drupe, black when mature, and containing a single lunate seed or *nut*.

Hab. Rich woodlands, thickets and fencerows : frequent. *Fl.* June. *Fr.* Sept. Octo.

Obs. The M. *virginicum*, *Willd.* &c. appears to be only a *variety* of this. One or 2 other species have been enumerated in the U. States.

[Clematis virginiana. Thalictrum dioicum. *Polyandria Polygynia*]
[Arum. *Monoecia Polyandria.*

Order 11. Monadelphia.

457. JUNIPERUS. *L. Nutt. Gen.* 806.

[Supposed from the Celtic, *Jeneprus*, rough, or harsh ; descriptive of the plant.]

STAMINATE FL. *Aments* ovoid-oblong ; *scales* peltate, verticillate. *Anthers* 4 to 8, 1-celled. PISTILLATE FL. *Aments*, or involucres, globose ; *scales* few, concave, united, becoming a fleshy tuberculate *berry*, and inclosing 2 or 3 bony *nuts*.

Trees, or shrubs : leaves sempervirent, persistent, mostly acerose, ternately verticillate, or opposite, decussate and imbricated ; flowers in small axillary or terminal aments,—the pistillate ones becoming fleshy or berry-like. *Nat. Ord.* 228. *Lindl.* CONIFERÆ.

1. J. COMMUNIS, *L.* Leaves subulate, cuspidate, ternate, spreading, longer than the fruit. *Beck, Bot. p.* 337.

COMMON JUNIPERUS. *Vulgò*—Juniper.

Gall.–Le Genevrier. *Germ.*–Der Wachholderstrauch. *Hisp.*–El Enebro.

Stem 4 to 6 or 8 feet high, much branched. *Leaves* half an inch to 3 quarters in length, linear-subulate, pungently acuminate, concave and glaucous on the upper surface, obtusely keeled and shining green beneath, sessile, very numerous, and arranged in verticils of 3 on the branches. *Staminate flowers* in axillary ferruginous *aments* 2 or 3 lines in length, with small peltate stipitate scales. *Berries* subglobose, bluish-black and glaucous when mature,—which, according to Dr. *Bigelow*, is not until the *second year* from the flower.

Hab. Hilly woodlands; Brandywine, &c. not common. *Fl.* April. *Fr.*

Obs. This shrub is partially naturalized, in several localities; but is evidently, I think, an introduced plant, in this County. It is not unfrequent in gardens,—where it was formerly cultivated for the *berries*, which are medicinal, and were also used in the distillation of the liquor called *Gin*, or *Geneva*. It is now generally neglected.

2. J. VIRGINIANA, *L.* Leaves, on the young branches, ovate, imbricated in 4 rows, shorter than the fruit—on the older branches, subulate, cuspidate, and somewhat spreading. *Beck, Bot. p.* 337. Icon, *Mx. f. Sylva*, 3. *tab.* 155.

VIRGINIAN JUNIPERUS. *Vulgò*—Cedar. Red Cedar.

Stem 20 to 30 or 40 feet high, and 9 to 15 or 18 inches in diameter at base, tapering, sending off numerous horizontal or spreading branches. *Leaves* small—those on the young branches scarcely a line in length, ovate, acute, opposite and decussate, crowded, appressed and imbricated, covering the branches and making them 4-angled;—those on the older branches 3 to 5 or 6 lines long, subulate, cuspidate and somewhat spreading. *Staminate flowers* in terminal oblong tawny-ferruginous *aments* 2 or 3 lines in length, with peltate scales covering the anthers. *Berries* roundish-ovoid, tuberculate with the points of the fleshy connate scales of the ament, or involucre, dark blue when mature, and covered with a bright bluish-glaucous powder.

Hab. Fence-rows; neglected fields, &c. frequent. *Fl.* April. *Fr.* October.

Obs. There seems to be a low shrubby *variety* of this, somewhat resembling the Juniper-bush,—with the leaves all acerose, spreading, and often of a purplish hue. The *wood* of the red Cedar is exceedingly durable, and much esteemed for making posts, &c. The plant is said to be pernicious, and even fatal to young Thorn hedges, if permitted to grow in their immediate vicinity. One or two additional species (or perhaps only varieties) are enumerated in the U. States.

458. TAXUS. *L. Nutt. Gen.* 807.

[The Latin name of the Yew-tree; supposed from the Greek, *Toxon*, a bow.]

STAMINATE FL. bursting from several opposite imbricated connate bud-scales,—the *staminiferous column* exserted, capitate at summit; *anthers* peltate, 6 or 8-celled; cells opening beneath. PISTILLATE FL. solitary, with imbricated scales at base. *Fruit* drupe-like, perforated at summit,—or the *nut* imbedded in a succulent *cup*.

Trees, or *shrubs:* leaves sempervirent, linear, alternate, and mostly distichous; flower-buds axillary, solitary; fruit an imperfect drupe, or succulent cup embracing the nut. *Nat. Ord.* 228. *Lindl.* CONIFERÆ.

1. T. CANADENSIS, *Marsh.* Leaves linear, mucronate, revolute on the margin, distichous; receptacle of the staminate flowers sub-globose. *Beck, Bot. p.* 341.

T. baccata, *var.* minor. *Mx. Am.* 2. *p.* 245.

CANADIAN TAXUS. *Vulgò*—Yew.

Stem 2 to 4 feet high, with numerous spreading branches. *Leaves* half an inch to three quarters in length, and scarcely a line wide, linear, acute, smooth and shining green, keeled, the margin recurved or revolute, entire, subsessile, or narrowed at base to a very short petiole, numerous and scattered, but distichously arranged along the branches, after the manner of *Pinus canadensis*. *Staminate flowers* from axillary solitary buds with yellow agglutinated or connate scales,—

the *filaments* monadelphous, protruded beyond the scales, and bearing the lobed peltate *anthers* in a roundish-oval head. *Fruit* an oval imperfect *drupe*, cup-like, or open at summit, dark orange-red and succulent when mature, containing an oval brown nut.

Hab. Banks of the Schuylkill, at Black Rock: rare. *Fl.* April. *Fr.* Sept.

Obs. This, though a more humble shrub, seems to be nearly allied to the T. *baccata*, of Europe. It is rare in this County,—having only been found in the above locality;—where it was collected by D. TOWNSEND, Esq. in 1829. It is the only species known in the U. States, and is worthy of culture among ornamental shrubbery.

CLASS XXI. CRYPTOGAMIA.*

DIV. I. FERN-LIKE PLANTS. Flowerless perennial plants, *mostly herbaceous, with a stem having a vascular system, and, for the most part, distinct leaves, or fronds; their* sporules *or* seeds *having a proper integument, and contained in distinct axillary or dorsal* thecæ. FILICOIDEÆ. *Lindl.*

Order 1. Equisetaceæ.

HORSE-TAIL TRIBE. *Flowerless plants*, with their *sporules* surrounded by elastic clavate *filaments*, and enclosed in *thecæ* or *capsules* arising from the scales of *terminal cones*. *Vernation* straight. *Nat. Ord.* 263. *Lindl.*

459. EQUISETUM. *L. Nutt. Gen.* 808.

[Latin, *Equus*, a horse, and *Seta*, a bristle, or hair; resembling a horse-tail.]

Fructifica'tion in *terminal ament-like spikes*, or *cones*, composed of peltate hexagonal subverticillate *scales*, on the under side of which are from 4 to 7 *indusia* (or involucres) which contain the sporules. *Sporules* numerous, globose, enfolded by 4 elastic clavate or spatulate filaments. *Plants leafless, mostly with verticillate branches.* Stem *and* branches *striate-sulcate, jointed, the joints separable, and surrounded by a membranous dentate or incised sheath.*

† *Fertile stems simple, succulent, brownish, appearing before the sterile ones and soon dying away,—the sterile ones remaining through the summer, with verticillate branches.*

1. E. ARVENSE, *L.* Sterile stems erect, or sub-decumbent, slightly scabrous, with simple ascending 3 or 4-angled branches, and the sheaths with subulate-lanceolate teeth; fertile stems erect, without branches, the sheaths large, loose, with long acuminate teeth. *Beck, Bot. p.* 446.

FIELD EQUISETUM. *Vulgò*—Horse-tail.

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* This large and remarkable Class comprises all plants which are *destitute of flowers*; and it has been subdivided into *Orders*, or *Families*, which are altogether *natural*. These Orders have been grouped into *Three Divisions*—viz. 1. FILICOIDEÆ, or Fern-like plants—2. MUSCOIDEÆ, or Moss-like plants—and 3. APHYLLEÆ, or Leafless flowerless plants. Of these Divisions I propose here to notice only the *first*; namely the *Ferns*, and *Fern-like plants*, which have been detected in Chester County.

Fertile stems appearing first, 6 to 9 inches high, simple, with a large ovoid-oblong terminal brownish *spike* (about 2 inches long, and half an inch to 2 thirds of an inch in diameter); *sheaths* large, loose, or somewhat swelling above, with long acute teeth, striate-ribbed, dark purplish-brown, whitish at base. *Sterile stems* 9 to 15 inches high, attenuated upwards, about 12-furrowed, sheathed at the joints, with a verticil of slender articulated branches from the base of the sheaths; *branches* 4 or 5 to 8 or 9 inches long, ascending, 3 or 4-angled, simple (sometimes a little subdivided), scabrous, green,—each branch with its own sheath at base, and sheathed at every articulation.

Hab. Moist grounds; borders of thickets, &c. frequent. *Fr.* April, May.

†† *Fertile stems at length throwing out verticillate branches, or bearing the fructification at the same time with the branches.*

2. E. SYLVATICUM, *L.* Sterile and fertile stems both branched, the branches compound, curved downwards; sheaths loose, deeply cleft into membranous segments. *Beck, Bot. p.* 446.

WOOD EQUISETUM.

Stems 9 to 18 inches high, striate-sulcate, jointed,—the joints invested with loose *sheaths* which are divided at summit into several broad lanceolate membranous tawny-ferruginous teeth (sometimes parted into 2 or 3 lance-oblong segments); *fertile stems* with verticils of rather short, compound, 4-angled, divaricate, or deflected branches, from the base of the 3 or 4 uppermost sheaths, and terminating in an oblong-ovoid brownish *spike*, about an inch long; *sterile stems* usually taller and more slender, the joints nearly all furnished with verticils of branches, which are longer, and considerably subdivided.

Hab. Low grounds; borders of woodlands: frequent. *Fr.* May.

††† *Stems all fertile and simple, or branched only at base.*

3. E. HYEMALE, *L.* Stems simple, naked, striate-sulcate, very rough, bearing a terminal ovoid spike; sheaths short, cylindric, whitish, with a black ring at base and summit; teeth lance-subulate, awned, deciduous. *Beck, Bot. p.* 446.

WINTER EQUISETUM. *Vulgò*—Scouring Rush.

Stems 1 to 2 feet high, simple, terete, fistular, jointed, striate-sulcate, rough (the ridges obtusely serrulate under a lens), pale cinereous-green, or glaucous (purplish-black at base), terminating in an ovoid blackish *spike* about half an inch long; *sheaths* 2 to 4 lines long, nearly cylindric, striate, whitish-cinereous, with a purplish-black band at base, and at summit a ring of small blackish teeth, which soon fall off, leaving the sheath truncate and entire.

Hab. Margins of swamps: knolls, &c. frequent. *Fr.* June.

Obs. The cuticle of this plant abounds in silicious earth; and its rough file-like surface is well adapted to the scouring and polishing of hard wood, metals, &c. Three or four additional species are enumerated in the U. States; and it is not improbable that some of them may yet be found in this County.

Order 2. Filices.

FERN TRIBE. *Flowerless plants*, with the *fructification* of only one kind upon the same species. *Thecæ* or *capsules* sometimes spiked, or racemed, but generally collected in *Sori* or *clusters*, of various shapes, upon the back or margin of the

frond,—naked, or covered with an *Indusium* or veil,—with or without an elastic *ring*. *Plants with a horizontal* rhizoma, *and* leaf-like fronds, *which are simple, or variously divided.* Vernation *circinate.* *Nat. Ord.* 264. *Lindl.*

Sect. 1. Capsules 1-*celled, furnished with an articulated elastic and usually incomplete ring, bursting transversely and irregularly.* POLYPODIACEÆ. *Lindl.*

460. POLYPODIUM. *L.* *Nutt. Gen.* 786.

[Greek, *Polys*, many, and *Pous*, *podos*, foot; from its numerous roots.]

Sori roundish, scattered on various parts of the under surface of the frond. *Indusium* none.

† *Frond pinnatifid.*

1. P. VULGARE, *L.* Frond deeply pinnatifid, smooth; segments linear-oblong, obtuse, crenate-serrulate, the upper ones gradually smaller; sori large, distinct. *Beck*, *Bot. p.* 447.

P. virginianum. *Muhl. Catal. p.* 97. Also, *Willd. Sp.* 5. *p.* 174. *Pursh*, *Am.* 2. *p.* 658. *Nutt. Gen.* 2. *p.* 250. *Bart. Phil.* 2. *p.* 207.

COMMON POLYPODIUM.

Rhizoma creeping, clothed with membranaceous tawny scales. *Fronds* 4 to 8 or 10 inches long, and an inch and half to 2 inches wide, oblong-lanceolate, pinnately divided nearly to the midrib; *segments* mostly alternate, sometimes nearly or quite opposite, 1 fourth to 1 third of an inch wide, linear-oblong, obtuse, slightly serrate or crenate; *stipe* or *petiole* naked and smooth (chaffy, *Willd. Pursh*), flattish or somewhat channelled on the upper side, obscurely and obtusely margined by the decurrence of the frond. *Sori* large, in 2 rows on the back of each segment, distinct, or finally in contact,—presenting dense circular clusters of small naked tawny or ferruginous grains.

Hab. Rocky woodlands: frequent. *Fr.* July.

Obs. This is the P. *virginianum*, *Muhl. Willd.* &c. and seems to differ from P. *vulgare*, of Europe, in nothing but its *naked stipe.*

†† *Frond bipinnatifid.*

2. P. HEXAGONOPTERUM, *Mx.* Frond bipinnatifid, slightly pubescent and ciliate; divisions lanceolate, the lower pairs adnate-decurrent, connected by an oblong hexagonal wing; segments lance-oblong, rather obtuse, the lower ones crenately incised, the upper ones entire; sori minute. *Beck*, *Bot. p.* 447.

HEXAGONAL-WINGED POLYPODIUM.

Fronds 6 to 9 inches long, and, at base, nearly as wide as long, forming in their outline almost an equilateral triangle, somewhat pubescent, especially on the midrib, bipinnatifid, the divisions lanceolate, pinnatifid, a few of the lower pairs united by an oblong and somewhat hexagonal wing on the midrib, one or both of the lowest pair often deflexed; *stipe* 8 to 12 or 15 inches long, slender, naked. *Sori* very small, roundish, distinct, somewhat in 2 rows, but often irregular, on the back of the segments.

Hab. Moist woodlands: frequent. *Fr.* July.

Obs. Four or five additional species are enumerated in the U. States.

461. ONOCLEA. *L. Nutt. Gen.* 820.
[An ancient Greek name; applied to this genus.]

Capsules covering the whole under surface of the frond. *Indusia* formed of the *segments* of the frond, which are contracted and revolute with their margins connate, resembling *berries*, opening but not expanding.

1. O. SENSIBILIS, *L.* Sterile frond pinnate; divisions lanceolate, the lower ones distinct, pinnatifid-dentate, the upper ones united at base, repand-dentate, or entire; fertile frond bipinnate, with the segments recurved and globosely contracted, resembling a compound spike. *Beck, Bot. p.* 448.

SENSITIVE ONOCLEA.

Sterile fronds 6 to 12 or 15 inches long, and 5 to 10 or 12 inches wide at base, oblong-triangular in their outline, pinnately dissected, smooth,—the lower divisions or *pinnæ* 3 to 6 or 7 inches long, and 3 fourths of an inch to 2 inches wide, oblong-lanceolate, laciniate or pinnatifid-dentate, distinct at base and sub-petiolate,—the upper ones smaller, linear-oblong, and nearly entire, confluent or united at base; *stipe* 6 to 10 or 12 inches long, slender, angular, naked. *Fertile fronds* 4 or 5 to 8 or 10 inches long, bipinnate, the divisions 1 to 2 or 3 inches long, nearly erect, the contracted and somewhat triangular-globose *segments* smoothish, dark brown,—resembling berries in two-rowed unilateral spikes; *stipe* 8 to 12 inches long, rather stout, subterete, naked and smooth.

Hab. Moist woodlands: frequent. *Fr.* July.

Obs. One other species is enumerated in the U. States,—which, however, Prof. *Torrey* considers as only a *variety* of this.

462. ASPIDIUM. *Swartz. Nutt. Gen.* 819.
[Greek, *Aspis*, a shield; from the form of the Indusium.]

Sori roundish, or elliptic, scattered. *Indusium* orbicular and umbilicate, or reniform and opening on one side.

† *Frond pinnate.*

1. A. ACROSTICHOIDES, *Willd.* Frond pinnate; leaflets alternate, distinct, lance-linear, acute, sub-falcate, mucronate-serrulate, auriculate at base on the upper side, subsessile, the upper ones only fertile; sori finally confluent; stipe and rachis chaffy. *Beck, Bot. p.* 448.

Nephrodium acrostichoides. *Mx. Am.* 2. *p.* 267.

ACROSTICHUM-LIKE ASPIDIUM.

Fronds 9 to 15 or 18 inches long, and 2 to 4 inches wide, lance-oblong in their outline, pinnate, the *pinnæ* or *leaflets* alternate, 1 to 2 inches long, and 1 fourth to half an inch wide, linear-lanceolate, very acute, or cuspidate, slightly falcate, obtuse at base and semi-hastate, or with a triangular auriculate mucronate production on the upper side, finely serrate, and somewhat ciliate, the serratures slenderly mucronate or awned, the upper surface smooth, somewhat pilose beneath, especially along the midrib, subsessile; *rachis* clothed with lance-linear membranaceous palish-tawny scales; *stipe* 2 or 3 to 5 inches long, chaffy. *Sori* in a single, or more commonly in a double row, on the under surface of the smaller leaflets at and near the summit, at first distinct, finally confluent and covering the whole surface; *indusium* orbicular, umbilicate in the centre.

Hab. Rocky woodlands: common. *Fr.* June—August.

Obs. This is common in all our woodlands,—especially on steep rocky banks of a northern exposure. The young Botanist should be careful to examine the *fructification* of the *Aspidiums* before it is too old,—otherwise, the disappearance of the *indusium* (or membranous veil which covers the young *Sori*), may lead him to confound the genus with *Polypodium*.

† † *Frond bipinnatifid.*

2. A. THELYPTERIS, *Willd.* Frond pinnate; leaflets opposite and alternate, distinct, subsessile, slender, linear-lanceolate, deeply and somewhat crenately pinnatifid; segments small, opposite, or alternate, ovate-oblong, rather acute, the margin entire and revolute; sori marginal, contiguous, finally confluent. *Beck, Bot. p.* 449.

Fronds 6 to 10 or 12 inches long, and 3 or 4 inches wide, oblong-lanceolate in their outline, pinnate, the *leaflets* opposite and alternate, 1 to 2 inches long, and 1 fourth to 1 third of an inch wide, linear-lanceolate in their outline, crenately pinnatifid nearly to the midrib, slightly pubescent, subsessile; *segments* 2 or 3 lines long, and 1 or 2 lines wide, ovate-oblong, rather acute, sometimes obtuse, with the margin revolute or recurved, rendering the under surface concave, and sheltering the fructification; *rachis* somewhat pubescent; *stipe* 9 to 12 or 15 inches long, naked. *Sori* commencing in small marginal dots, finally confluent, and usually covering the under surface of all the leaflets of the frond.

Hab. Sphagnous swamps, and wet thickets: frequent. *Fr.* July.

3. A. NOVEBORACENSE, *Willd.* Frond pinnate; leaflets opposite or alternate, distinct, sessile, oblong-lanceolate, deeply pinnatifid; segments oblong, rather obtuse, entire, ciliate; sori marginal, small. *Beck, Bot. p.* 449.
Nephrodium thelypterioides. *Mx. Am.* 2. *p.* 267.

NEW-YORK ASPIDIUM.

Fronds 9 to 15 or 18 inches long, and 3 to 5 or 6 inches wide, in their outline oblong-lanceolate and acuminate, pinnate, the *leaflets* sub-opposite and alternate, of a thin delicate texture, 2 to 3 inches long, and 1 third to 2 thirds of an inch wide (the upper and lower ones shorter), oblong-lanceolate, acuminate, deeply pinnatifid (the acumination nearly entire), somewhat pubescent, and pilose on the midrib beneath, sessile; *segments* 3 to 5 lines long, and 1 or 2 lines wide, linear-oblong, mostly obtuse, entire and ciliate; *rachis* pubescent; *stipe* 3 to 5 or 6 inches long, slender, channelled above, naked and smooth, or slightly pubescent. *Sori* small, marginal, in 2 rows on each segment.

Hab. Moist woodlands: frequent. *Fr.* July.

Obs. The fronds of this species are of a light thin and delicate texture, of a palish green color, and frequently sterile.

4. A. LANCASTRIENSE? *Spreng.* Frond pinnate; leaflets sub-opposite, the lower ones petiolate, triangular-ovate, sub-cordate at base, deeply pinnatifid; segments oblong, and obliquely triangular-ovate, rather obtuse, acutely serrate-dentate at apex; sori distinct; stipe somewhat chaffy. *Beck, Bot. p.* 449.
A. cristatum, *var.* lancastriense? *Pursh, Am.* 2. *p.* 662. *Torr. Comp. p.* 381.

LANCASTER ASPIDIUM.

Fronds slender, 18 inches to 2 feet long, and 3 to 4 or 5 inches wide, in their outline linear-lanceolate, acuminate, pinnate, smoothish,—the *leaflets* sub-opposite, or often alternate, especially the upper ones, an inch and half to near 3 inches long, and half an inch to an inch and quarter wide at base (the lower ones shorter, wider, and subcordate at base), oblong-lanceolate, pinnatifid, deep green, generally distinct and somewhat petiolate, the upper ones sessile and confluent (the terminal ones merely serrate),—the lower ones triangular or deltoid-ovate, on petioles 2 or 3 lines long, deeply pinnatifid; *segments* of the lower leaflets oblong, obtuse, those of the upper leaflets obliquely triangular-ovate,—all incised-dentate at apex, the segments gradually diminishing to mere double serratures in the terminal leaflets, or pinnæ; *rachis* smooth, or slightly chaffy; *stipe* 8 to 12 inches long, rather slender, and channelled above, pale greenish-straw-color, smoothish, or often somewhat clothed with a tawny membranaceous chaff. *Sori* middle-sized, distinct, dark brown, mostly in 2 rows on the segments, and generally confined to the leaflets forming the upper half of the frond; *indusium* orbicular-reniform.

Hab. Moist woodlands; West Chestor: not very common. *Fr.* July.

Obs. I have not had an opportunity to compare this with an authentic specimen; but, judging from the descriptions in the books, I think it must be the A. *lancastriense*—and possibly it may be only a *var.* of A. *cristatum*,—as *Pursh* and *Torrey* have supposed.

† † † *Frond bipinnate.*

5. A. MARGINALE, *Willd.* Frond sub-bipinnate; leaflets lanceolate, sub-pinnate, smooth; segments oblong, obtuse, crenate-serrate, decurrent, the lower ones nearly distinct; sori marginal, distinct; stipe chaffy. *Beck*, *Bot. p.* 450.

Nephrodium marginale. *Mx. Am.* 2. *p.* 267.

MARGINAL ASPIDIUM.

Fronds 9 to 15 inches long, and 4 to 6 inches wide, in their outline lance-oblong and acuminate, pinnate, bluish-green,—the *leaflets* sub-opposite, distinct, 2 to 4 inches long, and 3 fourths of an inch to an inch and quarter wide, oblong-lanceolate and acuminate, sub-pinnate, or deeply pinnatifid (the acumination crenate), distinct, subsessile, smooth, with the rachis of the leaflets membranaceously pilose; *segments* half an inch to near an inch long, and 2 to 3 or 4 lines wide, oblong, obtuse, crenate-serrate, decurrent, the lower ones nearly distinct, with a very narrow decurrence on the rachis or midrib; *common rachis* somewhat chaffy, or membranaceously pilose; *stipe* 4 to 8 inches long, clothed with a tawny membranaceous chaff, especially at or near the root, where it is somewhat tufted. *Sori* middle-sized, marginal, one at each notch in the segments of the frond (the lower leaflets mostly sterile); *indusium* orbicular, with a small notch or sinus on one side.

Hab. Rocky woodlands: frequent. *Fr.* July.

6. A. DILATATUM, *Willd.* Frond sub-tripinnate; pinnules or secondary leaflets distinct, lance-oblong, incisely pinnatifid; segments mucronate-serrate; stipe chaffy. *Beck*, *Bot. p.* 450.

A. intermedium. *Muhl. Catal. p.* 97. *Bart. Phil.* 2. *p.* 208. Also, *Willd. Sp.* 5. *p.* 262. *Pursh*, *Am.* 2. *p.* 663. *Nutt. Gen.* 2. *p.* 250.

DILATED ASPIDIUM.

Fronds 12 to 18 or 20 inches long, and 5 to 8 or 9 inches wide, in their outline elliptic-lanceolate, or oblong, acuminate, somewhat tripinnate, smooth,—the *primary divisions* 3 to 5 inches long, and 1 to 2 inches wide, lance-oblong in their outline, and acuminate, on short petioles,—the *secondary divisions* or leaflets mostly distinct (the lower ones sub-petiolate), pinnatifidly incised, and the *segments* again incised-serrate, with the serratures cuspidate, or abruptly and sharply acuminate; *common rachis* partially sulcate on the upper side, somewhat chaffy; *stipe* 6 to 12 or 15 inches long, chaffy, the chaff in large membranaceous scales, brownish tawny. *Sori* rather large, numerous, somewhat in 2 rows on the segments, brownish; *indusium* orbicular-reniform, umbilicate in the centre.

Hab. Moist woodlands: frequent. *Fr.* July.

Obs. This is a rather stout fern, often 2 feet or more in height, and growing in tufts. It is probably identical with A. *intermedium*, and A. *cristatum*, of Authors; and I have some doubts whether it be specifically distinct from A. *spinulosum*, and A. *aculeatum*, of *Pursh*, &c.

7. A. ASPLENIOIDES, *Willd.* Frond bipinnate; pinnules linear-lanceolate, incised-serrate, the serratures 2 or 3-toothed; sori oblong, lunate, finally confluent. *Beck, Bot. p.* 451.
Nephrodium asplenioides. *Mx. Am.* 2. *p.* 268.

ASPLENIUM-LIKE ASPIDIUM.

Fronds 12 to 18 inches long, and 4 to 8 or 9 inches wide, in their outline oblong-lanceolate, acuminate, bipinnate, or bipinnatifid, smooth,—the *primary divisions* 2 or 3 to 6 inches long, and 3 fourths of an inch to an inch and half wide, lance-oblong in their outline, and acuminate, subsessile—the *secondary divisions* or *segments* linear-lanceolate, or oblong, slightly confluent at base, or sometimes nearly distinct, doubly and very unequally incised-serrate, or the principal serratures broadish and 2 or 3-toothed; *common rachis* striate-sulcate with about 3 grooves on the upper side, naked and smoothish; *stipe* 6 to 10 or 12 inches long, naked and smooth. *Sori* oblong, at length lunately recurved, arranged in a double row (the outer ends diverging) along and near the midrib of the pinnules or secondary divisions of the frond,—the *indusium* bursting along the convex margin of the sorus, and adhering at the opposite margin.

Hab. Moist woodlands: frequent. *Fr.* July.

Obs. The *fructification* of this has so much resemblance to that of an *Asplenium*, that it is calculated to puzzle young Botanists. Eight or nine additional species are enumerated in the U. States.

463. WOODSIA. *Br. Nutt. Gen.* 818.

[Named in honor of *Joseph Woods;* an English Botanist.]

Sori roundish, scattered. *Indusium* calyciform, open, with a multifid or fringed margin, including the pedicellate capsules.

1. W. ILVENSIS, *Br.* Frond pinnate, membranaceously pilose; divisions deeply pinnatifid; segments ovate-oblong, obtuse; sori submarginal, finally confluent; rachis and stipe chaffy. *Beck, Bot. p.* 451. Not? of *Pursh.*
Polypodium ilvense. *Willd Sp.* 5. *p.* 198. *Ait. Kew.* 5. *p.* 505.

ILVA, OR ELBA WOODSIA.

Fronds 2 to 3 or 4 inches long, and 2 thirds of an inch to an inch and quarter wide, in their outline oblong-lanceolate, acute, pinnate, somewhat villose with

chaffy or membranaceous hairs, and tawny-ferruginous,—the *divisions* distinct, subsessile, 1 third to 3 fourths of an inch long, ovate-lanceolate, or lanceolate, rather obtuse, deeply pinnatifid, with ovate-oblong obtuse entire segments, somewhat concave and chaffy beneath; *common rachis* chaffy and membranaceously pilose; *stipe* 1 to 3 or 4 inches long, somewhat chaffy and pilose, with a tuft of tawny chaff at base. *Sori* near the margin of the segments, finally confluent, with the capsules slightly pedicellate; *indusium* beneath, or surrounding the capsules, opening and resembling a calyx, ciliate on the margin.

Hab. Rocky banks of streams; Black Rock: not common. *Fr.* June.

Obs. Collected by D. Townsend, Esq.

2. W. Perriniana, *Hook. & Grev.* Frond sub-bipinnate, minutely glandular-pilose; divisions rather distant, pinnate, or deeply pinnatifid; segments oblong, obtuse, crenate-serrate, the lower ones distinct; sori submarginal, finally subconfluent; stipe and rachis somewhat chaffy. *Beck, Bot. p.* 452.

Aspidium obtusum. *Willd. Sp.* 5. *p.* 254. *Muhl. Catal. p.* 97. *Pursh, Am.* 2. *p.* 662. *Nutt. Gen.* 2. *p.* 250.

Hypopeltis obtusa. *Torr. Comp. p.* 380. *Eat. Man. p.* 185.

Perrin's Woodsia.

Fronds 3 or 4 to 6 or 8 inches long, and 1 to 2 or 2 and a half inches wide, in their outline lance-oblong, sub-bipinnate, minutely glandular-pilose,—the *divisions* or pinnæ distinct, subsessile, half an inch to an inch and half long (the upper and lower ones shorter), ovate-lanceolate, obtuse, pinnate near the base, deeply pinnatifid towards the apex,—the *segments* or pinnules oblong, obtuse or rounded at apex, crenate-serrate, the lower ones often crenately and pinnatifidly incised, distinct, the others more or less confluent at base; *common rachis* slightly chaffy, or membranaceously pilose above; *stipe* 2 to 3 inches long, chaffy. *Sori* near the margin of the segments, orbicular, finally almost confluent; *indusium* sub-hemispheric, at length resembling a calyx, with small spreading denticulate segments.

Hab. Rocky banks; Chester Creek, &c. frequent. *Fr.* July.

Obs. Collected by D. Townsend, Esq. Two other species are enumerated in the U. States.

464. ASPLENIUM. *L. Nutt. Gen.* 822.

[Greek, *a*, privative, and *Splen*, the spleen; from its supposed medicinal virtues.]

Sori linear, oblique, or somewhat transverse, scattered. *Indusium* superficial, arising from the lateral veins, and opening longitudinally, generally on the side towards the midrib.

† *Frond mostly undivided.*

2. A. rhizophyllum, *L.* Frond lanceolate, stipitate, subcrenate, smooth, auriculate-cordate at base, the point very long and attenuated, often radicating at apex. *Beck, Bot. p.* 452.

Rooting-leaved Asplenium.

Fronds 3 or 4 to 8 or 9 inches long, and 1 third of an inch to an inch wide, at base, where it is auriculate-cordate, and thence lanceolately tapering to a very long sublinear acumination, which bends to the ground, and frequently throws out *roots* at the apex, producing a young and distinct plant (sometimes the frond is *bifid* nearly to the base, having *two* long slender acuminations); *stipe* 1 or 2 to 4

inches long, slender, slightly margined above by the decurrent frond, smooth. *Sori* linear and long (often 1 third of an inch in length), more or less oblique, the *indusium* not unfrequently opening on the side *from* the midrib.

Hab. Rocky woodlands: frequent. *Fr.* July.

†† *Frond pinnate.*

2. A. EBENEUM, *Willd.* Frond pinnate; pinnæ or leaflets sessile, lance-oblong, rather obtuse, subfalcate, serrate, auriculate at base on the upper side; stipe and rachis smooth, shining, dark purple. *Beck, Bot. p.* 453.!

A. trichomanoides. *Mx. Am.* 2. *p.* 265.

Also, A. polypodioides. *Muhl. Catal. p.* 97.

EBONY ASPLENIUM.

Fronds 6 to 12 or 14 inches long, and 3 fourths of an inch to an inch and half wide, lance-linear in their outline, acute or acuminate, pinnate, smooth; *leaflets* alternate, sessile, 1 third to 3 fourths of an inch long, and 2 to 3 lines wide, lance-linear, or oblong, mostly obtuse, and slightly falcate, serrate, semi-hastate, or with an auriculate production on the upper side at base,—often with a slight production on the lower side, and a little cordate at the insertion; *stipe* 1 to 2 or 3 inches long, and, with the *rachis*, very smooth, dark purple, or sometimes nearly black. *Sori* oblong, rather short, arranged in a double row along the midrib of the leaflets, with the outer end diverging, finally confluent.

Hab. Rocky woodlands: frequent. *Fr.* July.

3. A. TRICHOMANES, *L.* Frond pinnate; pinnæ or leaflets subsessile, small, obliquely oval, or roundish-obovate, crenate, the base cuneate, or cuneately truncate; stipe and rachis smooth, shining, very dark purple. *Beck, Bot. p.* 453.

A. melanocaulon. *Muhl. Catal. p.* 97. *Pursh, Am.* 2. *p.* 666. *Nutt. Gen.* 2. *p.* 251. *Bart. Phil.* 2. *p.* 211. *Eat. Man. p.* 36. Also, *Willd. Sp.* 5. *p.* 332. *Lindl. Ency. p.* 882.

Fronds 2 to 3 or 4 inches long, and 1 third to half an inch wide, lance-linear in their outline, pinnate, smooth, spreading, and often procumbent; *leaflets* alternate, subsessile, 2 to 3 lines long, and nearly as wide as long, obliquely and irregularly oval, ovate, or obovate-oblong, more or less rounded at apex, crenate, the base entire, and either cuneately tapering, or abruptly cuneate-truncate, often a little auriculately produced on the upper side; *stipe* 1 to 2 inches long, slender, and, with the *rachis*, semi-terete, or plano-convex, the upper flat surface slightly margined, or prominently angled along each edge, smooth and polished, dark purple, or sometimes nearly black. *Sori* linear-oblong, finally oval or roundish, 2 to 5 or 6 (usually 3 or 4) on each leaflet.

Hab. Shaded rocky banks: frequent. *Fr.* July.

††† *Frond bipinnatifid.*

4. A. THELYPTEROIDES, *Mx.* Frond pinnate; pinnæ or leaflets sessile, oblong-lanceolate, acuminate, deeply pinnatifid; the segments oblong, obtuse, crenately serrate-denticulate. *Beck, Bot. p.* 453.

THELYPTERIS-LIKE ASPLENIUM.

Fronds 12 to 18 inches long, and 4 to 6 or 8 inches wide, in their outline oblong-lanceolate, acuminate, pinnate, slender and rather flaccid, smoothish, and of a palish glaucous-green color; *leaflets* 2 to 5 inches long, and half an inch to 3 quarters wide, oblong-lanceolate in their outline, acuminate, sessile, distinct and rather distant on the common rachis, of a thinnish texture, pinnatifid,—the acumination crenate-serrate; *segments* 2 to 4 lines long, and 2 to 3 lines wide, linear-oblong, obtuse, obscurely crenate-serrate, or denticulate; *common rachis* slender, and, with the midrib of the leaflets, slightly pubescent on the upper side; *stipe* 6 to 10 inches long, slender and weak, pale straw-color, striate-sulcate on the upper side, slightly chaffy, or membranaceously pilose. *Sori* linear, acute on each end, arranged in two rows, one on each side of the midrib of the segments, the outer ends diverging.

Hab. Moist woodlands; shaded banks of streams: frequent. *Fr.* July.

†††† *Frond sub-bipinnate.*

5. A. Ruta muraria, *L.* Frond bipinnate at base, simply pinnate at summit; leaflets small, petiolate, rhomboid-cuneate, the upper half obtusely denticulate. *Beck, Bot. p.* 453.

Wall-rue Asplenium.

Fronds 1 to 2 inches long, and half an inch to an inch wide, spreading, smooth, dingy green, bipinnately dissected at base, or decompound, with the divisions petiolate, alternate, and usually bearing the leaflets in threes,—simply pinnate at the summit; *leaflets* 2 to 4 lines long, and 2 to 3 lines wide, more or less rhomboid, rather obtuse, dentate above the middle (sometimes partially lobed), entire below the middle, and cuneately tapering to a short flat petiole; *stipe* 1 to 2 inches long, slender, flat, smooth. *Sori* linear-oblong, slightly oblique, finally confluent, and of a dark ferruginous color.

Hab. Limestone rocks; near Brooke's Mill: not common. *Fr.* July.

Obs. Collected by D. Townsend, Esq. Two or three additional species are enumerated in the U. States.

465. PTERIS. *L. Nutt. Gen.* 824.

[The Greek name for a fern—from *Pteryx*, or *Pteron*, a plume, or feather.]

Sori marginal, continuous, linear. *Indusium* formed of the inflexed margin of the frond, often dilated into a membrane, opening along the inner side.

1. P. atropurpurea, *L.* Frond pinnate, or sub-bipinnate; lower divisions ternate, or pinnate; leaflets lance-oblong, obtuse, entire, obliquely truncate or subcordate at base. *Beck, Bot. p.* 454.

Dark-purple Pteris.

Fronds 3 or 4 to 6 or 8 inches long, and 1 to 2 or 3 and sometimes 4 inches wide across the lower divisions, somewhat bipinnate, the lower divisions being ternate, or odd-pinnate by 5's or 7's; *leaflets* 1 fourth of an inch to an inch or inch and quarter long, and 1 to 4 lines wide, subsessile (the terminal one longer and petiolate), varying from ovate-oblong to oval, lance-oblong, and linear, obtuse, smooth, greyish-green, often punctate beneath, with the margin entire and reflexed,—the lower leaflets occasionally subhastate, or auriculately produced, on one or both sides, at base; *stipe* 2 to 4 or 5 inches long, slender, terete, rather rigid (often numerous from the same root, with a dense tuft of tawny-ferruginous chaffy hairs at base), and, with the *common rachis*, roughish-pubescent, dark purple. *Sori* conspicuous, linear and marginal,—the *indusium* apparently a membranaceous

expansion of the reflexed margins of the leaflets, when young often undulately crenate at the inner edge.

Hab. Limestone banks; Great Valley: rare. *Fr.* June—August.

Obs. Collected by D. Townsend, Esq. near Gunkle's dam, and in the vicinity of Brooke's Mill.

2. P. aquilina, *L.* Frond 3-parted; branches bipinnate; pinnæ oblong-lanceolate, the lower ones pinnatifid, the upper ones entire; segments oblong, obtuse. *Beck, Bot. p.* 455.

Aquiline, or Eagle Pteris. *Vulgò*—Brake, or Bracken.

Fronds very large (1 to 2 or 3 feet long), superdecompound, spreading, the branches bipinnate, the *divisions* or pinnæ oblong-lanceolate, subsessile, pubescent, pale dingy green, the lower ones pinnatifid, the upper ones entire; *segments* half an inch to an inch and half long, and 2 to 4 or 5 lines wide, lance-oblong, obtuse, entire, or somewhat repand, with the margin reflexed, confluent at base, or sometimes the lower ones nearly distinct; *stipe* 1 to 2 feet long, angular, smooth, tawny, or brown. *Sori* linear and marginal, resembling a narrow russet border, or *hem*, along the edge of the segments, on the under side.

Hab. Moist woodlands; thickets, &c. frequent. *Fr.* July—August.

Obs. This large fern sometimes forms a little thicket of itself,—and affords a good shelter for game, along the margins of our woodlands. Two other species are enumerated in the U. States;—of which I have collected P. *caudata*, at Suffolk, Virginia,—but have not met with it in Pennsylvania.

466. ADIANTUM. *L. Nutt. Gen.* 828.

[Greek, *Adiantos*, dry; its surface repelling moisture.]

Sori marginal, interrupted, oblong, or roundish. *Indusia* membranaceous, arising from the reflexed margin of distinct segments of the frond, opening along the lower or inner side.

1. A. pedatum, *L.* Frond pedate; divisions pinnate; leaflets dimidiate, triangular-oblong, or semi-rhomboid, obtuse, with the upper margin incisely lobed and serrate; sori oblong, somewhat lunate. *Beck, Bot. p.* 455.

Pedate Adiantum. *Vulgò*—Maiden's Hair.

Fronds 6 to 9 inches long, and 9 to 12 inches wide, pedately branched, and spreading, glabrous, of a delicate texture, and pale bluish glaucous-green; *divisions* 3 to 6 or 8 inches long, and an inch to an inch and half wide, linear-oblong in their outline, obtuse, odd-pinnate; *leaflets* on very short slender petioles, alternate, 1 third of an inch to an inch long, and one fourth to near half an inch wide, obliquely triangular-oblong, or semi-rhomboid, entire on the lower margin, and as if halved, or cut off along the midrib (the terminal leaflet cuneate, and some of the lower ones obliquely and broadly so), the upper margin (and summit of the cuneate leaflets) incisely lobed, the sterile lobes serrate; *stipe* 6 to 12 or 15 inches long, slender, compressed, chaffy at and near the root, forked at summit, the divisions diverging and pedately branching, both stipe and branches very smooth, and shining, dark purple, or purplish-black. *Sori* oblong, or inversely lunate, marginal on the segments of the leaflets,—the *indusium* a membranaceous expansion of the reflexed margins of the segments,

Hab. Rich, rocky woodlands: common. *Fr.* July—August.

Obs. This delicate and beautiful fern is the only species of the genus known in the U. States,—though there are a number in South America.

467. CHEILANTHES. *Swartz. Nutt. Gen.* 829.

[Greek, *Cheilos*, a lip, and *anthos*, a flower; from the labiate form of the Indusium.]

Sori roundish, distinct, situated at the margin of the frond. *Indusium* of distinct membranaceous inflexed scales, opening inwards.

1. C. VESTITA, *Willd.* Frond bipinnate, hairy on both sides; pinnules pinnatifid, the segments rounded, entire; stipe and rachis hairy. *Beck, Bot. p.* 455.
Nephrodium lanosum. *Mx. Am.* 2. *p.* 270.

CLOTHED CHEILANTHES.

Fronds 3 to 6 inches long, and about an inch wide, lance-oblong in their outline bipinnate, hirsute; *pinnæ* about half an inch long, ovate-lanceolate in their outline, subsessile, the lower ones distant, pinnate (the upper ones only pinnatifid); *pinnules* oblong, obtuse, crenately pinnatifid,—the *segments* roundish or oval, concave beneath, or the margins recurved; *stipe* 1 to 3 inches long, terete, slender, but somewhat rigid, and, with the *common rachis*, roughish-pilose, dark brown. *Sori* marginal, at first distinct, finally crowded, or confluent.

Hab. Rocky banks: frequent. *Fr.* July.

Obs. One other species has been found in the U. States.

468. DICKSONIA. *L'Herit. Nutt. Gen.* 830.

[In honor of *James Dickson*; an English Botanist.]

Sori small and roundish or dot-like, marginal, distinct. *Indusium* double; one superficial, opening outwards, the other marginal and opening inwards.

1. D. PILOSIUSCULA, *Willd.* Frond bipinnate; pinnæ lanceolate, sessile; pinnules decurrent, ovate-oblong, pinnatifid, the segments incised-dentate; sori solitary, minute; stipe and rachis somewhat pilose. *Beck, Bot. p.* 456.
Nephrodium punctilobulum. *Mx. Am.* 2. *p.* 268.
Aspidium punctilobulum. *Torr. Comp. p.* 382.
Also, A. punctilobum. *Willd. Sp.* 5. *p.* 279. *Pursh, Am.* 2. *p.* 664. *Nutt. Gen.* 2. *p.* 250.

HAIRY DICKSONIA.

Fronds 1 to near 2 feet long, and 4 to 6 inches wide, lance-oblong in their outline, acuminate, bipinnate, somewhat pilose, especially on the common rachis, and midribs of the pinnæ; *pinnæ* or primary divisions mostly alternate, 3 or 4 inches long, and half an inch to near an inch wide, lanceolate, acuminate, pinnate, sessile, distinct, pale yellowish-green, numerous and rather crowded (except 2 or 3 of the lower pairs which are distant and nearly opposite); *pinnules* about half an inch in length, ovate-oblong, obtuse, pinnatifid, more or less decurrent at base, the *segments* with 2 to 4 teeth; *stipe* 4 to 8 or 10 inches long, and, with the rachis, channelled above, somewhat hairy, pale green, or sometimes reddish-tawny. *Sori* minute, one on the upper margin of each segment of the pinnules, at the lower tooth, or serrature.

Hab. Moist shaded grounds; along Brandywine: frequent. *Fr.*

Obs. This is a slender pretty fern, of a rather delicate texture. It is the only species of the genus in the U. States; and I confess I have not been able distinctly to perceive, in my dried specimens, all the features of the *indusium*, as given in the generic character.

Sect. 3. Capsules *destitute of a ring, reticulated, striated with rays at the apex, bursting lengthwise, and usually externally.* OSMUNDACEÆ. *Lindl.*

469. OSMUNDA. *L. Nutt. Gen.* 815.

[A name of obscure Etymology,—said to be of Northern origin.]

Capsules subglobose, pedicellate, radiate-striate, half 2-valved,—clustered on the contracted fronds,—or in terminal paniculate racemes. *Indusium* none.

1. O. INTERRUPTA, *Mx.* Frond pinnate, smooth; pinnæ nearly opposite, pinnatifid; segments oblong, entire; some of the intermediate pinnæ fertile. *Beck, Bot. p.* 457.

O. Claytoniana. *Muhl. Catal. p.* 97. Not of *Linn.* &c. (*See Journ. Acad. Nat. Sc. Philad. vol.* 6. *p.* 39).

INTERRUPTED OSMUNDA.

Fronds 1 to near 2 feet long, and 3 or 4 to 6 or 7 inches wide, erect, lance-oblong in their outline, pinnate, smooth, yellowish-green, interrupted near the middle by 2 or 3 pairs of contracted fertile pinnæ; *divisions* or *pinnæ* 2 to 4 inches long, and 3 fourths of an inch to an inch and quarter wide, oblong-lanceolate in their outline, distinct, subsessile, opposite, or nearly so, deeply pinnatifid (the *fertile* ones pinnate, or sub-bipinnate),—the *segments* about half an inch long, oval-oblong, mostly obtuse, sometimes rather acute, alternate, or often nearly opposite, entire, penni-nerved,—the *nerves* parallel, regularly bifurcating soon after leaving the midrib, finally purple;—the *fertile pinnæ* in 2 to 4 pairs near the middle of the frond, 1 to 2 inches long, and half an inch to 3 quarters wide, ovate-lanceolate in their outline, pinnate, or bipinnate, with the pinnules, or segments, entirely covered with clusters of small dark-brown capsules, and resembling compound racemes; *common rachis* channelled above, somewhat pubescent; *stipe* 6 to 9 or 12 inches long, channelled, smoothish, chaffy-tomentose at base.

Hab. Moist low grounds, and thickets: frequent. *Fr.* June—July.

2. O. SPECTABILIS, *Willd.* Frond bipinnate, fertile at summit; pinnules lance-oblong, serrulate, sub-petiolate; raceme large, decompound, smooth. *Beck, Bot. p.* 457.

O. regalis. *Mx. Am.* 2. *p.* 273. *Bigel. Bost. p.* 388. *Torr. Comp. p.* 386. *Eat. Man. p.* 243. Not ? of *L. Willd. Nit. Lindl.* &c.

SHOWY OSMUNDA.

Fronds 3 to 4 feet high, branching, bipinnate, smooth, pale greyish-green; *pinnules* alternate, on very short petioles, 1 to 2 inches long, and 1 fourth to 2 thirds of an inch wide, lance-oblong, rather obtuse, sometimes acute, obliquely truncate at base, or the lower half slightly produced, serrulate on the margin, somewhat penninerved, with the *nerves* a little prominent, irregularly and often twice bifurcating, greenish;—the *fertile pinnæ* at the summit, the *pinnules* contracted, and covered with clusters of minute smooth capsules, which are at first pale greenish-tawny, finally ferruginous,—forming altogether a terminal oblong decompound raceme 4 to 6 or 8 inches in length; *stipe* and branches smooth, pale tawny, or straw-color.

Hab. Moist meadows, and thickets: frequent. *Fr.* July.

Obs. Mr. *Nuttall* considers this handsome fern as scarcely distinct from the O. *regalis*, of Europe,—whilst *Willdenow* says "*simillima—sed species distinctissima.*" Not having any specimens of the European plant, I cannot venture an opinion.

3. O. CINNAMOMEA, *L.* Sterile frond pinnate, with the pinnæ elongated, pinnatifid; fertile frond bipinnate, with the pinnæ contracted, subopposite, lanuginous; stipe lanuginous. *Beck, Bot. p.* 457.

CINNAMON-COLORED OSMUNDA.

Sterile and fertile fronds distinct, growing together in bunches; the *sterile* ones most numerous, 1 to 2 feet or more in length, and 5 to 10 or 12 inches wide, lance-oblong in their outline, pinnate; *pinnæ* or *divisions* 3 to 6 inches long, and half an inch to near an inch wide, linear-lanceolate in their outline, distinct, sessile, mostly alternate, deeply pinnatifid, slightly pubescent, green, the *segments* oblong, obtuse, or sometimes acute, entire; *common rachis* channelled above, pubescent; *stipe* 9 to 15 or 18 inches long, clothed with a loose flocculent reddish-tawny tomentum; *fertile* fronds few, 9 to 15 or 18 inches long, and about an inch wide, bipinnate; *pinnæ* all fertile; an inch to an inch and half long, ovate-lanceolate, sessile, mostly opposite, erect, lanuginous, the lower ones distant; *pinnules* crowded, covered with clusters of minute ferruginous capsules,—forming dense compound glomerate racemes; *stipe* 1 to 2 feet long, rather stout, and, with the *common rachis*, clothed with a long loose membranaceous reddish tomentum.

Hab. Moist low grounds; along Brandywine, &c. frequent. *Fr.* July—Aug.

Obs. One other species is enumerated in the U. States.

Sect. 5. Capsules *single, roundish, coriaceous, opaque, without ring or cellular reticulation, half* 2-*valved.* Vernation *straight.* OPHIOGLOSSEÆ. *Lindl.*

470. OPHIOGLOSSUM. *L. Natt. Gen.* 811.

[Greek, *Ophis*, a serpent, and *Glossa*, a tongue; from the form of the spike.]

Capsules roundish, smooth, 1-celled, 2-valved, opening transversely, connate at base, forming a compact distichous spike. *Indusium* none.

1. O. VULGATUM, *L.* Frond simple, oblong-ovate, obtuse, closely reticulate; spike cauline. *Beck, Bot. p.* 458. Icon, *Bart. Am.* 2. *tab.* 55. *f.* 2.

COMMON OPHIOGLOSSUM. *Vulgò*—Adder's tongue.

Root a fascicle of coarse fleshy fibres. *Frond* solitary, an inch and half to 3 inches long, and 1 to 2 inches wide, oblong-ovate, obtuse, entire, smooth, light green, without midrib, reticulately veined, sessile, and somewhat amplexicaul, rather below the middle of an erect smooth succulent scape-like *stipe* 6 to 12 inches high, with a short sheath at the root, and terminating at summit in a compressed lance-linear 2-ranked *spike* an inch to an inch and half in length. *Capsules* at first connate, and partially imbedded in the rachis, opening horizontally, finally distinct, pale tawny.

Hab. Moist low grounds; woods, and thickets: frequent. *Fr.* June.

Obs. One other species is enumerated in the U. States.

471. BOTRYCHIUM. *Swartz. Natt. Gen.* 812.

[Greek, *Botrys*, a bunch of grapes; in allusion to the fructification.]

Capsules subglobose, 1-celled, 2-valved, coriaceous, smooth, distinct, sessile along the margins of a compound pinnated rachis, opening transversely. *Indusium* none.

1. B. FUMARIOIDES, *Willd.* Scape bearing the frond near the base; frond 3-parted, the divisions bipinnatifid; segments obliquely lance-ovate, crenulate; spike bipinnate. *Beck*, *Bot. p.* 459.
B. obliquum. *Bart. Phil.* 2. *p.* 205. Also, *Willd. Muhl. Pursh*, &c.
Botrypus lunarioides. *Mx. Am.* 2. *p.* 274.

FUMARIA-LIKE BOTRYCHIUM.

Root a fascicle of coarse fleshy fibres. *Frond* about 3 inches long, and 4 inches wide, somewhat deltoid or triangular in the outline, biternately dissected, or 3-parted, and the *divisions* irregularly bipinnatifid, petiolate; *segments* of the subdivisions obliquely lance-ovate, or oblong, acute, or obtuse, finely crenate, smooth, rather thick and fleshy (or coriaceous when dry), green beneath, often tawny-ferruginous on the upper surface; *stipe* 2 to 3 inches long, angular, or ribbed, slightly pilose, inserted on the scape about an inch above the root; *scape* 6 to 8 or 9 inches high, striate-angled, or ribbed, bearing at its summit a tawny compound or *bipinnate spike* 2 to 4 inches in length, with the small *capsules* sessile in double rows on the subdivisions, or pinnules.

Hab. Moist low grounds: frequent. *Fr.* July—Sept.

Obs. The B. *obliquum*, as *Pursh* suggested, appears to be nothing but a starved modification of this,—with a more simple frond;—and has, therefore, been very properly reduced to a *variety*, by Prof. *Torrey*.

2. B. DISSECTUM, *Muhl.* Scape bearing the frond near the base; frond 3-parted, the divisions bi- or tri-pinnatifid; segments sub-linear, bifid, or 2 or 3-toothed at apex; spike bipinnate. *Beck*, *Bot. p.* 459.

DISSECTED BOTRYCHIUM.

Root a fascicle of coarse fleshy fibres. *Frond* 2 or 3 inches long, and 3 or 4 inches wide, somewhat rounded, and obtusely triangular, in their outline, 3 parted, with the *divisions* irregularly bipinnatifid, petiolate, the subdivisions often much dissected; *segments* cuneate-oblong, or linear, 2 or 3-toothed (often bifid) at apex, entire on the margin, smooth, rather thick and fleshy, green beneath, tawny or ferruginous above; *stipe* 3 or 4 inches long, striate-ribbed, somewhat pilose, inserted on the scape about an inch above the root; *scape* 6 to 9 inches high, with a terminal compound *spike*, and *capsules*, like the preceding.

Hab. Moist low grounds: frequent. *Fr.* August—Sept.

Obs. With the exception of the more dissected frond (and even that varies), this is very nearly related to the preceding species; nor am I sure it is more than a *variety*.

3. B. VIRGINICUM, *Sw.* Scape bearing the frond near the middle; frond 3-parted, the divisions bipinnatifid; segments obtuse, incised-dentate, about 3-toothed; spike bipinnate. *Beck*, *Bot. p.* 459.
Also, B. gracile. *Pursh*, *Am.* 2. *p.* 657. *Nutt. Gen.* 2. *p.* 248. *Eat. Man. p.* 57.
Botrypus virginicus. *Mx. Am.* 2. *p.* 274.

VIRGINIAN BOTRYCHIUM. *Vulgò*—Rattlesnake Fern.

Plant somewhat pilose. *Frond* 3-parted, or ternate, inserted near the middle of the scape, *divisions* 4 to 6 or 7 inches long, broad-ovate or somewhat deltoid in their outline, bipinnatifid, petiolate, green; *pinnæ* 1 to 3 inches long, and half an inch to 3 quarters wide, subsessile, deeply pinnatifid, the *segments* cuneate-oblong, obtuse, rather thin, incised-dentate at and near the apex, the teeth 2 to 4 or 5, usu-

ally 3, acute; *scape* 9 to 18 or 20 inches high, bearing at its summit a reddish-tawny compound or *bipinnate spike* 1 or 2 to 4 or 5 inches in length, with the small *capsules* sessile in double rows on the subdivisions, or pinnules.

Hab. Rich hilly woodlands: frequent. *Fr.* May—July.

Obs. The B. *gracile*, of *Pursh*, has been reduced to a *variety* of this, by Prof. *Torrey*; and, I think, correctly so. One other species has been enumerated in the U. States.

Order 3. Lycopodiaceæ.

Club-Moss Tribe. *Flowerless plants*, with their *sporules* inclosed in *axillary thecæ*. *Plants often* Moss-like, *and sempervirent, with creeping stems and imbricated leaves*. Vernation *circinate*. *Nat. Ord.* 265. *Lindl.*

472. LYCOPODIUM. *L. Nutt. Gen.* 809.

[Greek, *Lykos*, a wolf, and *Pous, podos*, a foot; from a fancied resemblance.]

Capsules axillary, sessile, 1-celled,—some of them 2-valved, including a fine powdery substance,—others 3-valved, containing a few large globose grains.

a. *Capsules in Spikes.*

† *Spikes pedunculate.* * *Leaves scattered.*

1. L. CLAVATUM, *L.* Stem creeping, branching; branches ascending, terete; leaves scattered, numerous, subulate-linear, incurved, capillaceously acuminate; spikes mostly in pairs, cylindric, pedunculate: scales ovate, acuminate, erose-denticulate. *Beck, Bot. p.* 460.

Clavate Lycopodium. *Vulgò*—Club-Moss.

Stem 2 to 4 or 5 feet, or more, in length, rather stout, terete, leafy, prostrate, and striking root with an occasional coarse fibre from the under side, branching,—the *branches* 1 to 4 or 5 inches long, alternate, ascending, terete, often subdivided. *Leaves* numerous, closely and irregularly scattered round the stem and branches, 3 to 5 lines in length, sessile, linear-subulate, rather erect and incurved, acute, and terminating in a long slender membranaceous hair-like point (forming a kind of pencil, or hairy tuft, at the summit of the branches), entire, or the margin often denticulate with very minute divaricate teeth, smooth, pale green. *Spikes* mostly in pairs (sometimes 1, rarely 3), yellowish, erect, on an ascending leafy branch-like *peduncle* 2 or 3 to 4 or 5 inches long; *scales* ovate, setaceously acuminate, the margin minutely and erosely serrulate.

Hab. Woodlands, and thickets: frequent. *Fr.* July.

* * *Leaves apparently bifarious.*

2. L. COMPLANATUM, *L.* Stem mostly trailing, branched; branches erect, or ascending, dichotomously and pedately subdivided at summit, with the branchlets flatted and spreading; leaves 4-rowed, unequal, the marginal ones connate, diverging at apex, the superficial ones solitary, appressed; spikes cylindric, 4 to 8, on a long common peduncle. *Beck, Bot. p.* 460.

Planed, or flatted Lycopodium.

Plant smooth. *Stem* 2 or 3 to 6 or 8 feet long, rather slender, terete, or subcompressed, somewhat leafy, procumbent (sometimes 6 to 12 inches long, and nearly

erect, or decumbent), branching,—the *branches* 1 to 3 or 4 inches long, erect, or ascending, terete, or slightly angular, flexuose, clothed with a few scattered subulate-lanceolate appressed leaves, the summit of the branches somewhat pedately divided, and dichotomously subdivided, into numerous spreading flatted *branchlets*, with winged *margins* which are cut into acute segments resembling distichous or bifarious *leaves*; and on the upper and lower superficies of these branchlets is a row of subulate appressed leaves,—thus making the leaves in reality quadrifarious or 4-rowed. *Peduncles* 4 to 6 inches long, slender, terete, with a few remote subulate leaves, dichotomously subdivided at summit 2 or 3 times, so as to bear 4 to 8 pedicellate *spikes* each about an inch in length; *scales* orbicular-ovate, acuminate, with a membranaceous undulate-serrulate margin.

Hab. Borders of woods, and thickets: frequent. *Fr.* July.

Obs. The trailing variety of this is often collected, as an ornamental evergreen, and hung in festoons round looking-glasses, pictures, &c. in country parlours.

†† *Spikes sessile.* * *Leaves scattered.*

3. L. DENDROIDEUM, *Mx.* Stem erect; branches alternate, crowded near the summit, erect, dichotomous; leaves somewhat 6-rowed, linear-lanceolate, equal, spreading; spikes terminal, sessile. *Beck, Bot. p.* 460.

TREE-LIKE LYCOPODIUM. *Vulgò*—Ground Pine.

Plant smooth. *Stem* 6 to 9 inches high, erect, or ascending, terete, flexuose, clothed with lance-linear acute leaves, branched and bushy near the summit, the branches dichotomously subdivided, slender. *Leaves* (on the branches) somewhat 4-rowed, about 2 lines long, obliquely subulate-linear, or slightly falcate, acute, spreading, shining green. *Spikes* mostly several (1 or 2 to 5 or 6), about 2 inches long, terete, and a little tapering to the summit, sessile on the terminal branches; *scales* ovate, acute, or acuminate, with a membranaceous margin.

Hab. Woodlands, and shady thickets: frequent. *Fr.* July.

4. L. RUPESTRE, *L.* Stem creeping, with ascending subdivided branches; leaves scattered, imbricated, linear-lanceolate, capillaceously acuminate, ciliate on the margin; spikes terminal, sessile. *Beck, Bot. p.* 461.

ROCK LYCOPODIUM.

Stem 1 to 3 inches long, creeping and much subdivided, with the branches short (half an inch to an inch long), and ascending, terete, clothed with imbricated subulate-linear greyish-green *leaves*, which are serrulate-ciliate on the margin, and terminating in a cinereous membranaceous hair-like point (forming a bluish-white pencil-like tuft at the summit of the branches). *Spikes* 1 third to half an inch long, somewhat 4-angled, sessile and terminal on the branches, apparently forming a prolongation of them; *scales* ovate-lanceolate, capillaceously acuminate, serrulate-ciliate, somewhat keeled, or concave; *capsules* orange-yellow.

Hab. Rocky banks; along Chester Creek: not very common. *Fr.* July.

Obs. Collected by D. TOWNSEND, Esq.

* * *Leaves bifarious.*

5. L. APODUM, *L.* Stem branching, radicating near the base; leaves 2-rowed, alternate, amplexicaul, obliquely ovate, acute, membranous, with smaller acuminate superficial ones; spikes terminal, sessile. *Beck, Bot. p.* 461.

Also, L. albidulum. *Willd. Sp.* 5. *p.* 37. (L. albidum. *Muhl. Catal. p.* 98.) *Pursh, Am.* 2. *p.* 654. *Eat. Man. p.* 215.

Footless Lycopodium.

Plant small, procumbent, or oblique, smooth and pale green,—resembling a *moss*. *Stem* 1 to 2 inches long, filiform, branching. *Leaves* very small (less than a line in length), ovate, acute, denticulate under a lens, membranaceous, alternate, distichously arranged and diverging,—with smaller acuminate ones, mostly appressed, on the upper side of the branches, nearly opposite the lateral ones. *Spikes* small, terminal and sessile,—apparently a mere continuation of the branches, with the *capsules* in the axils of the leaves.

Hab. Moist rocky shaded places: frequent. *Fr.* July—August.

Obs. Collected by Mr. Joshua Hoopes. On comparing this with specimens of L. *helveticum*, received from France, I incline to think, with Dr. *Beck*, that they are scarcely distinct. The only difference I can perceive, is in the leaves of ours being rather more ovate.

b. *Capsules axillary.*

6. L. lucidulum, *Mx.* Stem assurgent, bifid, or with 2 or 3 dichotomous subdivisions; leaves numerous, lance-linear, acute, denticulate, spreading, or reflexed. *Beck, Bot. p.* 461.

Shining Lycopodium.

Stem 6 to 12 or 15 inches long, nearly erect,—sometimes decumbent, and radicating near the base,—sparingly and dichotomously branched. *Leaves* 1 third to half an inch long, lance-linear, acute, denticulate, spreading, or reflexed, deep shining green, especially those on the branches, or at and near the summit. *Capsules* a little compressed, subreniform, or semi-circular, palish-yellow, sessile in the axils of the leaves, about an inch from the top of the stem, or branches;—and in interrupted series below,—being the persistent capsules of preceding years.

Hab. Moist woodlands, and low grounds: frequent. *Fr.* July—August.

Obs. Seven or eight additional species are enumerated in the U. States.

473. ISOETES. *L. Nutt. Gen.* 832.

[Gr. *Isos*, equal, and *Etos*, the year; having the same appearance all the year.]

Capsule membranaceous, oblong, 1-celled, not opening, imbedded in the dilated base of the frond. *Sporules* globose, or slightly angular, attached to numerous filiform *receptacles*, which traverse the capsule.

1. I. lacustris, *L.* Fronds cespitose, subulate, semiterete and obtusely angular, dilated and imbricate at base. *Beck, Bot. p.* 462.

Lake Isoetes. *Vulgò*— Quill-wort.

Root fibrous. *Fronds* numerous, 4 to 12 or 15 inches long, linear-subulate (somewhat resembling the leaves of a *Juncus*), acute, smooth, green (often whitish towards the root), a little dilated at base, and imbricated in a dense tuft, semi-terete and angular above the base, composed of longitudinal tubes which are jointed, or interrupted by transverse partitions. *Fruit* in an oval-oblong whitish membranaceous indehiscent *capsule*, which is traversed, within, by numerous linear *receptacles*, and lies imbedded in the dilated and swollen base of the frond; *sporules* or *seeds*? numerous, small, white, globose, reticulately cellular or honeycomb-like on the surface, and marked with 2 or 3 keel-like ridges, or angles.

Hab. Ponds, and shaded wet places: frequent. *Fr.* July—August.

Obs. A curious little aquatic, often entirely submersed, in ponds and sluggish streams. It is the only known species of the genus.

ADDITIONS AND CORRECTIONS.

☞ The reader is requested to make a reference with a pencil, in the pages and places indicated, to the following Additions and Correcti ns.

Page 6. Next after LEPTANDRA VIRGINICA, insert

6* (474.). JUSTICIA. *L. Nutt. Gen.* 18.
[In honor of *James Justice*; a Scotch Horticulturist.]

Calyx 5-parted, with 2 or 3 *bracts* at base. *Corolla* irregular, bilabiate; upper lip emarginate, the lower one 3-lobed. *Filaments* 2, each with a single or double *anther*. *Style* filiform. *Capsule* attenuated below, 2-valved, 2-celled; *dissepiment* contrary, growing from the centre of each valve. *Seeds* few, lenticular.

Herbaceous, or shrubby: leaves mostly opposite, without stipules; flowers in axillary pedunculate spikes, or terminal and solitary. *Nat. Ord.* 214. *Lindl.* ACANTHACEÆ.

1. J. PEDUNCULOSA, *Mx.* Leaves linear-lanceolate; spikes axillary; flowers crowded; peduncles elongated, mostly alternate. *Beck, Bot. p.* 285.
J. americana. *Willd. Sp.* 1. *p.* 92. *Ait. Kew.* 1. *p.* 38. *Muhl. Catal. p.* 2.
J. pedunculata. *Pers. Syn.* 1. *p.* 21.
J. ensiformis. *Ell. Sk.* 1. *p.* 11.

PEDUNCULATE JUSTICIA.

Plant smooth. *Root* perennial, creeping. *Stem* about 2 feet high, herbaceous, rather slender, angular and sulcate, simple, or sparingly branched from the axils. *Leaves* opposite, 3 to 6 inches long, and 1 third to 3 fourths of an inch wide, linear-lanceolate, acute, entire, attenuated at base to a short petiole. *Flowers* in oblong sub-capitate *spikes*, which are 1 third to 3 fourths of an inch long, and supported on slender axillary *peduncles* 1 to 4 inches in length; *bracts* and *calyx-segments* subulate-lanceolate; *corolla* pale violet-purple; upper lip deeply emarginate, the lower lip with 3 oblong obtuse lobes; *stamens* as long as the tube of the corolla; *anthers* double,—or 2-celled with the cells separated, one terminal and the other subterminal. *Style* filiform, exserted; *stigma* minute. *Capsule* about half an inch long, acute, tapering at the base.

Hab. Margin of the Schuylkill, above Pughtown: rare. *Fl.* June, July. *Fr.* Aug. Sept.

Obs. Collected in August, 1836, by Mr. JOSEPH RINEHART. Two other species are enumerated in the U. States.

Page 9. To the *Obs.* on FRAXINUS, add—Five or six additional species are enumerated in the U. States.

Page 10. After the *Obs.* at the end of the Order, add
[Cyperus diandrus. *Triandria Monogynia.*]

Page 10. PODOSTEMUM. This has been reduced to a species of LACIS, *Schreb.* by M. *Bongard*, of St. Petersburg; and is described under the name of *Lacis ceratophylla*, by Sir W. J. HOOKER, in

the *Second Volume* of the *Companion to the Botanical Magazine*, page 23. The description is, moreover, accompanied by a beautiful, accurate, and partially colored engraving of the plant.

Page 14. Lines 7 and 30 from the top, for "PONTEDERIÆ," read PONTEDEREÆ.

Page 15. Fifth line from the bottom, for "cylindric," read terete.

Page 15. Next after CYPERUS STRIGOSUS, insert

2.* C. REPENS, *Ell.* Root creeping, tuberiferous at the extremities; umbel simple, or compound, 4 to 6-rayed; spikes distichous; spikelets linear, obtuse, compressed, approximated and somewhat spreading; involucre about 3-leaved, longer than the umbel. *Torr. N. Am. Cyp. in Ann. Lyc. N. Y.* 3. *p.* 264.

C. phymatodes. *Muhl. Catal. p.* 6. *Ejusd. Gram. p.* 23. *Bart. Phil.* 1. *p.* 27. *Torr. Fl.* 1. *p.* 62. *Ejusd. Comp. p.* 44. *Beck, Bot. p.* 422. *Eat. Man. p.* 118. *Gray, Gram.* 1. SPECIM. *no.* 73.

C. tuberosus. *Pursh, Am.* 1. *p.* 52. Also, *Nutt. Gen.* 1. *p.* 35. Not of *Willd. Pers.* &c.

CREEPING CYPERUS.

Root (or *rhizoma*) perennial, of numerous coarse fibres, creeping extensively, and often terminating in tubers about the size of a pea. *Culm* 1 to 2 feet high, triquetrous, striate, very smooth. *Leaves* 9 to 18 inches or 2 feet long, and 2 to 4 lines wide, keeled, striate, smooth, or slightly scabrous on the margin. *Umbel* rather erect, the rays 1 to 2 or 3 inches long. *Involucre* usually 3 or 4-leaved, the leaves scabrous on the margin, 2 or 3 of them longer than the umbel. *Spikelets* half an inch to 3 quarters in length, a little compressed, linear, obtuse when mature, somewhat distichously arranged on the common rachis,—the lowest ones often in pairs, or fasciculate. *Glumes* oblong, rather acute, nerved, smooth, pale tawny, the margin scarious. *Seed* oblong, triquetrous, minutely punctate under a lens.

Hab. Cultivated lots; West-town School: rare. *Fl.* Aug. *Fr.* Sept.-Octo.

Obs. This was collected by Mr. JOSHUA HOOPES, in 1835, at the above locality, where it appears to have been introduced; and, if not kept in subjection, may prove to be a troublesome plant.

Page 16. Before MARISCUS OVULARIS, insert

1.* M. RETROFRACTUS, *Vahl.* Umbel simple; rays elongated; heads obovoid, or oblong, retrorsely imbricated; spikelets subulate, finally reflexed. *Beck, Bot. p.* 429.

Scirpus retrofractus. *Willd. Sp.* 1. *p.* 304. *Pers. Syn.* 1. *p.* 68. *Muhl. Catal. p.* 7. *Ejusd. Gram. p.* 40.

BACKWARD-BENT MARISCUS.

Root perennial, fibrous. *Culm* 1 to 2 feet high, rather slender, tumid at base, obtusely triquetrous, striate, nearly leafless, minutely roughish-pubescent—the angles scabrous near the summit. *Leaves* sub-radical, usually more than half the length of the culm, 1 to 2 or 3 lines wide, striate, smoothish, or slightly pubescent and somewhat glaucous. *Rays* 6 to 8 or 10, unequal, 1 to 3 or 4 inches long, slender, sub-terete, striate, smooth, sheathed at base,—the *sheaths* or *ochreæ* 1 third to 2 thirds of an inch long, bicuspidate at summit. *Involucre* of several unequal leaves, striate, aculeately scabrous on the margin, 2 or 3 of them often longer than the umbel (all generally shorter, *Torr.*). *Heads* half an inch to near an inch long,

and 1 third to half an inch in diameter, obovoid or turbinate, sometimes oblong. *Spikelets* numerous, slender, subulate, 1-flowered, the upper ones mostly spreading, the others more or less reflexed. *Glumes* striate, the 2 lowest ones short, lance-ovate, empty, the middle one lance-oblong, fertile, the terminal one very narrow and involute. *Seed* linear, triquetrous.

Hab. Chesnut hill, near Pugh-town: rare. *Fl.* August. *Fr.* Sept.

Obs. Collected in the above locality, August, 1836, by Mr. JOSEPH RINEHART.

Page 18. Line 13 from the top (and wherever the words occur), for "*Torr. Scirp.*" read *Torr. N. Am. Cyp.*—also after "*p.*" add the figures 344.

Page 18. Line 25 from the top, for "*Fl.* July. *Fr.* August." read *Fl.* Aug. *Fr.* Sept.

Page 18. Line 13 from the bottom, for "Trichelostylis capillaris" read Isolepis capillaris—and after "*p.*" add 350.

Page 19. Line 7 from the top, for "Trichelostylis autumnalis" read Trichelostylis mucronulata—and after "*p.*" add 355.

Page 19. Line 27 from the top, after "*p.*" add 299.

" " Line 5 from the bottom, after "*p.*" add 302.

Page 20. Line 18 from the top, after "*p.*" add 309.

" " Line 17 from the bottom, after "*p.*" add 308.

Page 21. Before SCIRPUS DEBILIS, insert

9.* S. TRIQUETER, *L.* Culm nearly naked, triquetrous; spikelets 4 to 5, lateral, aggregated, sessile, oblong-ovoid; glumes orbicular-ovate, mucronate; seed unequally and doubly convex, acuminate. *Torr. N. Am. Cyp. in Ann. Lyc. N. Y. 3. p. 322.*

S. americanus. *Pursh, Am. 1. p. 56. Nutt. Gen. 1. p. 32. Bart. Phil. 1. p. 33. Ell. Sk. 1. p. 80. Bigel. Bost. p. 21. Torr. Fl. 1. p. 47. Ejusd. Comp. p. 38. Beck, Bot. p. 425. Eat. Man. p. 329. Gray, Gram. 2. SPECIM. no. 134.* Also, *Pers. Syn. 1. p. 68.*

Also, S. mucronatus. *Pursh, Am. 1. p. 55. Ell. l. c. Eat. Man. p. 330.*

TRIQUETROUS SCIRPUS. *Vulgò*—Chair-maker's Rush.

Root perennial. *Culm* 2 to 4 or 5 feet high, cuspidate at summit, acutely triquetrous (2 of the sides concave the other flat), naked and smooth, sheathed at base, the sheaths often bearing a few short leaves. *Spikelets* in a dense lateral cluster, often near the summit, ovoid, or ovoid-oblong. *Glumes* orbicular-ovate, often emarginate, and mucronate with the projecting midrib, ferruginous on the sides, the margin scarious and somewhat pubescent. *Seed* somewhat triquetrous, with convex sides, abruptly acuminate, dark brown, smooth. *Bristles* 3 to 5 or 6, slender, retrorsely scabrous, brittle.

Hab. Margin of the Schuylkill, above Pughtown: rare. *Fl.* July. *Fr.* Sept.

Obs. Collected by Mr. JOSEPH RINEHART, Aug. 1836. This is the plant generally used in making the seats of rush-bottomed Chairs, in the U. States. It does not attain to so large a growth in this County as it does along tide water.

Page 25. Line 9 from the bottom, for "SCLEREÆ," read SCLERIEÆ.

Page 44. Next after DIGITARIA SANGUINALIS, insert

2.* D. GLABRA, *R.* & *S.* Leaves and sheaths smooth; spikes 2 or 3, digitate, sub-alternate; spikelets lance-ovoid, a little crowded, pubescent; glume as long as the abortive floret. *Beck, Bot. p.* 398. SPECIM. *Gray, Gram.* 1. *no.* 22.

D. paspalodes. *Mx. Am.* 1. *p.* 46. *Pursh, Am.* 1. *p.* 70. *Nutt. Gen.* 1. *p.* 56.

D. humifusa. *Pers. Syn.* 1. *p.* 85.

D. ischæmum. *Muhl. Catal. p.* 9. *Ejusd. Gram. p.* 131.

SMOOTH DIGITARIA.

Root annual. *Culm* 6 to 12 inches long, decumbent, or often quite prostrate, and spreading, rarely radicating at the joints; joints smooth. *Leaves* short (1 to 2 inches long, flat, smooth, or sparingly pilose on the upper surface; *sheaths* striate, smooth, contracted and a little hairy at throat. *Spikes* seldom more than 3 (often 2), 1 to 3 inches long; *rachis* flat, margined, flexuose, striate, minutely scabrous. *Spikelets* mostly dark purple, or greenish-purple, lance-ovoid, somewhat compressed, on short pedicels, alternate in 2 rows on one side of, and appressed to, the rachis. Inferior *glume* wanting. *Palea* of the *abortive floret* 5-nerved, pubescent.

Hab. Cultivated lots; Indian-corn fields: frequent. *Fl.* Aug. Sept. *Fr.* Octo.

Obs. This had been over-looked, as a *var.* of D. *sanguinalis*,—to which it has considerable resemblance at first sight; but may be readily distinguished on comparison. I collected it in 1835. It is usually quite prostrate, smooth, and much tinged with dark purple on the upper side,—paler or green on the side next the earth.

Page 56. AGROSTIS LATERIFLORA, &c. After a closer observation, and more mature reflection, I incline to think that it might be as well to distribute our American species of Agrostis according to the arrangement adopted by Dr. *Gray*.

Page 58. Line 32 from the top, for "finally lacerate," read finely lacerate.

Page 67. Line 6 from the bottom, for "COMMON AVENA," read CULTIVATED AVENA.

Page 86. Line 9 from the top, for "COMMON TRITICUM," read CULTIVATED TRITICUM.

Page 97. Line 5 from the bottom, for "bipartile," read bipartible.

Page 105. After HEDYOTIS CŒRULEA, insert

2. H. LONGIFOLIA, *Hook.* Stem branching, 4-angled; leaves lance-linear, or oblong, the radical ones attenuated at base; stipules broad-ovate, entire, or 2 or 3-toothed, membranaceous; flowers mostly in threes, terminal and subterminal, corymbose; corolla funnel-form. *Hook. Am.* 1. *p.* 286.

Houstonia longifolia. *Willd. Sp.* 1. *p.* 583. *Muhl. Catal. p.* 15. *Nutt. Gen.* 1. *p.* 95. *Ell. Sk.* 1. *p.* 192. *Bigel. Bost. p.* 53. *Torr. Fl.* 1. *p.* 173. *Ejusd. Comp. p.* 81. *Beck, Bot. p.* 243. *Eat. Man. p.* 178. H. angustifolia. *Mx. Am.* 1. *p.* 85. *Pers. Syn.* 1. *p.* 125. *Pursh, Am.* 1. *p.* 106.

LONG-LEAVED HEDYOTIS.

Root perennial. *Stem* 5 to 8 or 10 inches high, 4-angled, sometimes simple, but often much branched, and bushy, with the branches sub-fastigiate, minutely roughish-pubescent. *Leaves* 3 fourths of an inch to an inch and half long, and 1 to 3 or 4 lines wide, opposite, entire, rather acute, smooth, sessile,—the radical ones oblanceolate, and attenuated almost to a petiole at base; *stipules* ovate, acute, entire, or with 2 or 3 teeth, membranaceous, whitish. *Flowers* mostly in threes, terminal and subterminal, somewhat corymbose. *Calyx* shorter than the tube of the corolla; *segments* linear. *Corolla* purple; *lobes* oblong-ovate, rather acute.

Hab. Chesnut hill, above Pugh-town: rare. *Fl.* June—Aug. *Fr.* Aug—Sept.

Obs. Collected in August, 1836, by Mr. JOSEPH RINEHART.

Page 106. Line 8 from the top, for "ovate," read ovoid.

Page 113. Line 8 from the bottom, for "Smilacina canadensis." read Smilacina bifolia.

Page 117. PULMONARIA VIRGINICA. The *style* of this plant *varies* in its relative length, during the process of flowering,—being at one period shorter than the tube of the corolla, and at another exserted.

Page 125. LYSIMACHIA. Mr. RINEHART collected a *Lysimachia*, on the North side of the County, in Aug. 1836, which I suspect to be the L. *longifolia*, Pursh; but the specimen furnished me was too imperfect to be determined satisfactorily.

Page 125. Next after LYSIMACHIA, insert

96* (475.). SAMOLUS. *L. Nutt. Gen.* 186.
[Supposed to have been named from the island of *Samos*.]

Calyx 6-cleft, persistent, the base adnate to the ovary. *Corolla* salver-form, 5-lobed, with 5 *scales* (or *abortive stamens*) alternating with the lobes; tube short. *Capsule* half inferior, 1-celled, many-sceded, opening with 5 spreading teeth-like valves at summit. *Seeds* on a central free receptacle.

Herbaceous: leaves alternate; flowers racemose, terminal and axillary; pedicels bracteate near the middle. *Nat. Ord.* 207. *Lindl.* PRIMULACEÆ.

1. S. VALERANDI, *L.* Leaves obovate, or spatulate-oblong, entire; racemes elongated, loose, many-flowered; pedicels with a minute bract. *Beck, Bot. p.* 291.
VALERANDUS' SAMOLUS. *Vulgò*—Water Pimpernel.
Gallicè—Mouron d'eau. *Germanicè*—Das Samoskraut.

Root perennial. *Stem* 8 to 12 inches high, erect, slender, smooth, with a few loose axillary branches above. *Leaves* half an inch to 2 inches long, and 1 third of an inch to an inch wide, varying from obovate to spatulate-oblong, and rhomboid-lanceolate, mostly obtuse, entire, slightly fleshy in their texture, smooth and green, narrowed at base almost to a petiole. *Flowers* small, in slender loose *racemes* (2 to 4 or 5 inches in length) terminating the branches; *pedicels* half an inch to 3 quarters in length, filiform, spreading, with a minute subulate *bract* near the middle. *Calyx-segments* ovate, acute. *Corolla* white, about twice as long as the calyx; *lobes* obtuse. *Ovary* adnate to the base of the calyx. *Capsule* roundish-obovoid, a little compressed, opening at summit into 5 partial valves, or spreading teeth.

Hab. Wet low grounds; Great Valley: rare. *Fl.* July—Sept. *Fr.* Aug—Octo.

Obs. This was collected (Aug. 1836,) by Mr. JOSEPH RINEHART, in a wet meadow near the Baptist Meeting House, in the Great Valley. It is common to both

hemisphere, and is usually restricted to the vicinity of salt water; but I have a *Kentucky* specimen form Prof. SHORT. It is the only known species of the genus.

Page 126. ERYTHRÆA PULCHELLA. The *Exacum pulchellum*, of *Pursh, Torrey, Beck*, &c. is probably a *Synonym* of this.

Page 129. PHLOX DIVARICATA. The *leaves*, on the suckers or *stolones* of this species, become *rather thick and coriaceous* in the latter part of the season.

Page 140. CLAYTONIA VIRGINICA. To line 27 from the top, add Icon, *Bart. Am.* 2. *tab.* 51.

Page 159. Line 26 from the top, for "(L. *periclymenum*)," read (L. *Caprifolium*).

Page 160. Line 10 from the bottom (and wherever the word occurs), for "ciliæ," read *cilia*.

Page 168. Next before ASCLEPIAS, insert

129 * (476). GONOLOBUS. *Mx. Nutt. Gen.* 240.

[Greek, *Gonia*, an angle, and *Lobos*, a pod; from its ribbed or angular follicles.]

Calyx much smaller than the corolla, 5-parted. *Corolla* rotate, deeply 5-parted. *Lepanthium* scutellate, 5-lobed, equalling the antheridium. *Antheridium* depressed, discoid, pentangular, without either winged angles, or scarious cusps. *Pollinia* 5 pairs, transverse. *Follicles* 2. *Seeds* comose.

Herbaceous: stem twining; leaves opposite; flowers in axillary pedunculate umbels. *Nat. Ord.* 195. *Lindl.* ASCLEPIADEÆ.

1. G. MACROPHYLLUS, *Mx?* Leaves roundish-cordate with the sinus nearly closed, abruptly acuminate; follicles muricate; lobes of the lepanthium divided. *Ell? Sk.* 1. *p.* 327.
Cynanchum macrophyllum? *Muhl. Catal. p.* 28.

LONG, OR LARGE-LEAVED GONOLOBUS.

Root perennial. *Stem* several feet long, slender, hirsutely pubescent, twining and climbing over shrubs. *Leaves* 3 to 5 inches long, and often nearly as wide as long, orbicular-cordate, with a short abrupt acumination, entire, of a thinnish texture, finely pubescent, especially beneath and on the margin, pilose on the nerves; *petioles* 1 to 2 inches long, hirsute with spreading hairs. *Flowers* in loose cymose *umbels*, on axillary *common peduncles* 1 or 2 to 4 inches in length. *Calyx* small; *segments* linear-lanceolate, hirsute. *Corolla* deeply 5-parted; *lobes* about half an inch long, linear-oblong, rather obtuse, greenish and pubescent externally, of a dark dingy-purple on the inner surface.

Hab. Chesnut hill, near Pughtown: rare. *Fl.* *Fr.*

Obs. Found in the above locality, in Aug. 1836, by Mr. JOSEPH RINEHART, who collected a specimen without flowers. The *leaves* are more orbicular, and with a shorter acumination, than in my specimens from the South and West; but Mr. *Nuttall* unhesitatingly pronounced our plant to be G. *macrophyllus*. I suspect, however, it must be the same with that described as G. *obliquus*, by Dr. *Torrey*—and given on the authority of *Z. Collins*, Esq. as "certainly indigenous near the falls of the Schuylkill." *See Torr. Fl.* 1. *p.* 278. Three or 4 additional species are enumerated in the U. States.

Page 183. After HYDROCOTYLE AMERICANA, add

2. H. RANUNCULOIDES, *L.?* Creeping; glabrous; leaves orbicular-reniform, somewhat 5-lobed; lobes obtuse, crenate, the middle one smaller and more distinct; umbels subcapitate, few-flowered, peduncu-late. *Torr. Fl.* 1. *p.* 304.

H. cymbalarifolia. *Muhl. Catal. p.* 30. *Ell. Sk.* 1. *p.* 346. *Beck, Bot. p.* 140.

RANUNCULUS-LIKE HYDROCOTYLE.

Root perennial. *Stem* creeping, throwing out verticils of long fibres. *Leaves* half an inch to 3 quarters long, and 3 fourths of an inch to an inch wide, smooth and thickish or-subcoriaceous, reniform, 3-lobed, and crenate, with the lateral segments partially 2-lobed, the middle lobe smallest; *petioles* 1 to 2 inches long. *Umbels* small (5 to 10-flowered); *flowers* on very short *pedicels; common peduncle* about an inch long.

Hab. Wet places; above Pugh-town: rare. *Fl.* July. *Fr.* Sept.

Obs. Imperfect specimen collected in Aug. 1836, by Mr. JOSEPH RINEHART.

Page 188. Line 21 from the top, for "COMMON PETROSELINUM" read CULTIVATED PETROSELINUM.

Page 196. Line 11 from the top, for "COMMON PASTINACA" read CULTIVATED PASTINACA.

Page 198. To the description of DAUCUS CAROTA, add—The *central flower* of the *umbel* mostly dark purple, abortive.

Page 202. Line 8 from the top, for "COMMON CORIANDRUM" read CULTIVATED CORIANDRUM.

Page 210. Next after ARALIA RACEMOSA, add

3. A. HISPIDA, *Mx.* Suffruticose; stem and petioles hispid; leaves doubly pinnate; leaflets lance-ovate, acuminate, incised-serrate, smooth; umbels axillary and terminal, on long peduncles. *Beck, Bot. p.* 151.

HISPID ARALIA.

Root perennial. *Stem* 18 inches to 2 feet high, shrubby at base and hispid with rigid tawny bristles, slender, subherbaceous and somewhat branched above, more or less pilose, or hirsute. *Leaflets* 1 to 2 inches long, and 3 fourths of an inch to an inch and half wide, sessile; *common petioles* dilated at base, more or less his-pid. *Umbels* on long naked branches, or branching *common peduncles* (2 or 3 to 5 or 6 inches long); *involucre* many-leaved; *leaflets* subulate-linear, acute, ciliate; *rays* about an inch long, filiform, smooth. *Petals* greenish-white, mostly reflexed.

Hab. Chesnut hill, near Pugh-town: rare. *Fl.* June—July. *Fr.* Sept.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART.

Page 216. Line 2 from the bottom, for "COMMON ALLIUM" read CULTIVATED ALLIUM.

Page 240. EPILOBIUM. D. TOWNSEND, Esq. has collected speci-mens in the Great Valley, which may, perhaps, be E. *palustre*, of the American Botanists; but I am not yet quite satisfied of its identity with the European plant.

Page 241. Next after ŒNOTHERA, insert

195.* (477). GAURA. *L. Nutt. Gen.* 362.
[Greek, *Gauros*, superb; from its showy spikes of flowers.]

Calyx tubular, adnate to the ovary at base; *limb* 4-parted, the segments partially cohering, reflexed, and, with part of the tube, deciduous. *Petals* mostly 4, ascending. *Ovary* quadrangular, 1-celled; *stigma* 4-lobed. *Capsule* bony or nut-like, indehiscent, by abortion 1 or few-seeded.

Herbaceous, or suffruticose: leaves alternate; flowers in terminal spikes. *Nat. Ord. 47. Lindl.* ONAGRARIÆ.

1. G. BIENNIS, *L.* Stem sub-herbaceous, erect, hairy; leaves oblong-lanceolate, acute, denticulate; flowers irregular; petals lance-obovate, ascending; fruit sessile, quadrangular-ovoid, sub-acuminate, tapering at base, sulcate, pilose. *Beck, Bot. p.* 117.

BIENNIAL GAURA.

Root biennial. *Stem* 2 to 4 or 5 feet high, firm and sub-frutescent, much branched, hairy, often purple. *Leaves* 1 to 4 or 5 inches long, and 1 fourth of an inch to an inch wide, acute at each end, repand-denticulate, sessile, pubescent, pale green, at length purple. *Flowers* numerous, sessile, in terminal *spikes*, at first densely corymbose, gradually elongating, and blooming in succession,—the branches leafless for some distance below the racemes, and virgate; *bracts* minute, lance-linear, obtuse, pilose-ciliate, purple, caducous. *Calyx* tubular, pubescent, the lower half of the *tube* adnate to the ovary, quadrangular, the upper half slightly quadrangular and ventricose, villose within,—the *limb* oblong-clavate before expanding, 4-parted, the *segments* lance-linear, partially cohering in pairs, speedily reflexed, purple, deciduous with the upper half of the tube. *Petals* at first white or reddish-white, finally purple, somewhat unilateral on the upper side of the flower, ascending, obovate-lanceolate, slender, inserted at the orifice of the calyx-tube. *Stamens* about as long as the petals, and inserted with them, slightly declined; *filaments* clavate; *anthers* incumbent, fuscous. *Ovary* 1 fourth to 1 third of an inch long, apparently 1-celled, and containing numerous *ovules* attached to a central placenta; *style* scarcely longer than the stamens, villose within the tube of the calyx, smooth and clavate at summit; *stigma* mostly of 4 short thick spreading lobes (or 4 stigmas ?), which seem to have burst from a theca or envelope. *Capsule* 1 third to half an inch long, quadrangular-ovoid, abruptly acuminate, tapering at base, sulcate, with the angles obtuse, succulent before maturity, becoming bony or nut-like, by abortion 1 to 3 or 4-seeded.

Hab. Along Schuylkill, above Pughtown: rare. *Fl.* Aug. Sept. *Fr.* Octo.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. Four or five additional species are enumerated in the U. States.

Page 246. At the end of *Octandria Monogynia*, add
[Polanisia graveolens. *Polyandria Monogynia.*]

Page 255. After the *Obs.* at the end of *Class* 9, add
[Hypericum virginicum. *Polyandria Di-Pentagynia.*]

Page 273. Next after SILENE ANTIRRHINA, insert

3. S. NOCTIFLORA, *L.* Viscid-pubescent; stem erect, branching; leaves large, the lower ones spatulate, the upper ones lanceolate; flowers large, sub-paniculate; calyx cylindric-ventricose, 10-nerved, with the 5 teeth

at summit very long; petals bipartite, denticulate. *DC. Prodr.* 1. *p.* 379.

NIGHT-FLOWERING SILENE.

Plant clothed with a roughish pubescence, viscid at summit. *Root* annual. *Stem* 6 to 12 or 15 inches high, terete, branching,—the branches opposite and axillary, di- or tri-chotomously paniculate at summit. *Leaves* 1 to 2 inches long, and 1 fourth of an inch to an inch wide,—the lower ones spatulate, those above varying from spatulate-oblong to lance-linear,—all more or less acute, tapering at base, sessile, covered with small rough dots. *Flowers* terminal, on peduncles half an inch to an inch and half long. *Calyx* about 3 fourths of an inch long, at first oblong, finally ventricose-elliptic and about half an inch in diameter, with 10 green hairy ribs, and the intervals whitish and membranaceous; *teeth* 5, subulate and hairy, 1 fourth to 1 third the length of the calyx. *Petals* pale red, or reddish-white. *Capsule* as long as the calyx, ovoid-elliptic. *Seeds* numerous, roundish-reniform, striate-ribbed, with the ribs obtusely serrulate, or moniliform, of a dingy leaden-brown color when mature.

Hab. Cultivated fields; West-Chester: rare. *Fl.* July—Aug. *Fr.* Aug—Sept.

Obs. This foreigner was found by Mr. JOSHUA HOOPES, August, 1836, growing in considerable quantity among the stubble of a wheat field, adjoining the Borough of West Chester,—where it had probably been introduced with Clover-seed.

Page 290. Next after CERASUS VIRGINIANA, insert

4. C. OBOVATA, *Beck*. Leaves obovate, acuminate, sharply serrate, smoothish, with small tufts of pubescence in the axils of the lower nerves beneath; petioles mostly with 2 glands; racemes spreading; fruit ovoid, acute. *Beck. Bot. p.* 97.
C. virginiana, *var.* humilior? *Mx. Am.* 1. *p.* 285.
Prunus hirsutus? *Ell. Sk.* 1. *p.* 541.
P. obovata. *Bigel. Bost. p.* 192. *Eat. Man. p.* 285.

OBOVATE CERASUS.

A shrub. *Stem* 4 to 6 feet high, branching. *Leaves* 2 to 4 inches long, and 1 to 2 or 2 and a quarter inches wide, generally obovate, sometimes oblong-oval, acuminate, with the apex mucronate, mostly obtuse at base, equally and very sharply serrate, the serratures with a slender callous acumination, rather spreading,—the upper surface green and smooth, or slightly pilose on the midrib and nerves, the under surface somewhat glaucous, smooth, except some small tufts of whitish pubescence in the axils of the nerves, and occasionally extending along them; *petioles* half an inch to 3 quarters in length, smooth, mostly with 2 glands near the base of the leaf. *Flowers* in simple lateral racemes, from the branches of the preceding year; *common peduncle* 1 to 2 inches long, often bearing 2 or 3 rather small leaves; *racemes* 2 or 3 inches long, diverging, and often recurved, smooth; *pedicels* about 4 lines long. *Drupes* 4 to 6 lines long, and about 3 lines in diameter, ovoid, rather acute, often slightly sulcate on one side, dark red, or purplish, when mature, somewhat astringent and bitter.

Hab. Banks of the Brandywine: not common. *Fl.* *Fr.* July—Aug.

Obs. Found by Mr. JOSEPH RINEHART, July, 1836, on the west side of the Brandywine, near the place called "Deborah's rock," below the bridge on the Strasburgh road. It is clearly distinct from C. *virginiana*, and C. *serotina*,—as Drs. *Bigelow* and *Beck* have remarked; and, as the young branches appear to be smooth, I have some doubts whether it be not also distinct from *Prunus hirsutus*,

of *Ell.* with which Dr. *Beck* thinks it may be identical. I have not yet seen it in flower; but Dr. *Bigelow* says the flowers are white, larger and a fortnight earlier than those of C. *virginiana*.

Page 315. Next before CHELIDONIUM, insert

247.* (478). POLANISIA. *Raf.* *DC. Prodr.* 1. *p.* 242.
[ ]

Calyx of 4 sub-cruciate sepals, spreading. *Petals* 4, sub-cruciate, unequal. *Stamens* 8 or 12 to 32. *Torus* (or *receptacle*) small. *Capsule* elongated (resembling a *Silique*), 1-celled, 2-valved, sessile in the calyx, or scarcely stipitate; terminated by a distinct *style*. *Seeds* numerous, subreniform, with the embryo incurved.

Herbaceous: leaves alternate, petiolate, compound, without stipules; flowers axillary, or in terminal racemes. *Nat. Ord.* 11. *Lindl.* CAPPARIDEÆ.

1. P. GRAVEOLENS, *Raf.* Glandular-pilose and viscid; leaves ternate; leaflets elliptic-oblong, and spatulate; stamens 8 to 12; capsule lance-oblong, attenuate at base, muricate with a glandular pubescence. *Beck, Bot. p.* 34.

Cleome dodecandra. *Willd. Sp.* 3. *p.* 566. *Mx. Am.* 2. *p.* 32. *Pers. Syn.* 1. *p.* 391. *Muhl. Catal, p.* 61. *Pursh, Am.* 2. *p.* 441. *Nutt. Gen.* 2. *p.* 73. *Bart. Am.* 1. *p.* 83 (ICON, *tab.* 22). *Bigel. Bost. p.* 254. *Lindl? Ency. p.* 558. *Eat. Man. p.* 99.

STRONG-SCENTED POLANISIA.

Plant somewhat fœtid. *Root* annual. *Stem* 6 to 12 or 15 inches high, branching, striate, roughish-pubescent with short glanduliferous viscid hairs, greenish-white, or often tinged with purple. *Leaves* ternate; *leaflets* 3 fourths of an inch to an inch and half long, and 1 third to 2 thirds of an inch wide (the terminal one usually largest), varying from lance-obovate and obtuse, to elliptic-oblong and spatulate-lanceolate with the apex more or less acute, entire, or obscurely repand, slightly glandular-pubescent, subsessile; *common petioles* half an inch to an inch and half long, slender, pubescent. *Flowers* axillary, solitary (crowded, whilst young, in a corymbose leafy raceme at summit), on slender peduncles. *Calyx* roughish-glandular externally, mostly purple; *sepals* unequal, lance-ovate and lance-linear, acute, slightly cohering at base. *Petals* ochroleucous, longer than the calyx, often irregularly obcordate, and sometimes 3-toothed, at apex, narrowed below to a filiform claw. *Stamens* exserted; *filaments* very slender, mostly purple. *Capsule* siliquose, an inch and half to 2 inches long, and 1 fourth to 1 third of an inch wide, lance-oblong, rather obtuse, somewhat compressed, often slightly falcate, veined, and roughish with short gland-bearing hairs, pale green, tapering at base to a short stipe; *peduncle* about 3 fourths of an inch long. *Seeds* reniform-orbicular, appearing as if doubled, roughish-punctate, brown when mature, becoming loose and rattling in the thin membranous capsule.

Hab. Chesnut hill, above Pughtown: rare. *Fl.* June—Aug. *Fr.* Aug.—Octo.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. The only known species in the U. States.

Page 327. Next before RANUNCULUS, insert

260* (479.). HYDROPELTIS. *Mx. DC. Prodr.* 1. *p* 112.
[Greek, *Hydor*, water, and *Pelte*, a shield; from the floating peltate leaves.]

Calyx of 3 or 4 petaloid sepals. *Petals* 3 or 4, longer than the sepals. *Stamens* about as long as the petals. *Carpels* oblong, acuminate, 1-celled, 2-seeded. *Seeds* roundish-obovoid.

An Herbaceous aquatic: leaves alternate, entire, peltate, floating; flowers axillary, solitary, pedunculate. *Nat. Ord. 7. Lindl.* HYDROPELTIDEÆ.

1. H. PURPUREA, *Mx.* Leaves elliptic, centrally peltate; peduncles solitary, 1-flowered. *Beck, Bot. p.* 19. ICON, *Mx. Am.* 1. *tab.* 29. Brasenia Hydropeltis. *Muhl. Catal. p.* 55. *Torr. Comp. p.* 228. B. peltata. *Pursh, Am.* 2. *p.* 389. *Nutt. Gen.* 2. *p.* 24. *Bart. Phil.* 2. *p.* 26. *Ell. Sk.* 2. *p.* 66.

PURPLE HYDROPELTIS. *Vulgò*—Water-target.

Plant purplish green. *Root* perennial. *Stem* varying in length with the depth of water (1 to 10 feet long, *Ell.*), slender, and, with the peduncles, petioles and under surface of the leaves, coated with a transparent gelatinous slime. *Leaves* 2 to 3 or 4 inches long, and an inch and half to 2, or 2 and a half inches wide, oval, very entire, centrally peltate, and floating on the surface of the water, somewhat crowded near the summit of the stem, the upper surface smooth and shining, with about eleven nerves radiating from the centre; *petioles* 6 to 12 or 15 inches long, slender. *Flowers* brownish-purple, solitary, axillary; *peduncles* 2 or 3 to 5 or 6 inches long; *sepals* about half an inch long, linear-elliptic; thickish, colored; *petals* longer, thinner and membranaceous; *anthers* dark purple. *Carpels* oblong, a little ventricose, acuminate and tipped with the persistent style.

Hab. Pigeon-creek, above Pughtown: rare. *Fl.* June—July. *Fr.* Aug.—Sept.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. The only known species of the genus.

Page 328. Next after RANUNCULUS PUSILLUS, insert

4.* R. REPTANS, *L.* Stem filiform, geniculate, creeping; joints 1-flowered; leaves linear-lanceolate, and subulate-linear, entire, remote, smooth. *Beck, Bot. p.* 7. var. filiformis, *DC. Torr.* &c. R. filiformis. *Mx. Am.* 1. *p.* 320. *Pers. Syn.* 2. *p.* 102. *Nutt. Gen.* 2. *p.* 23. *Bart. Am.* 2. *p.* 101 (ICON, *tab.* 70. *fig.* 2.). *Bigel. Bost. p.* 224. *Eat. Man. p.* 296.

CREEPING RANUNCULUS.

Root perennial. *Stem* 6 to 12 inches long, very slender and thread-like, smooth, prostrate, geniculate, or forming a series of undulating curves of about an inch in span, throughout its whole length, and generally sending out roots and leaves at the joints. *Leaves* few, simple, rather erect, half an inch to an inch long, lanceolate, or subulate-linear, rather obtuse,—often spatulate-lanceolate, or three-fourths of their length narrowed to a petiole. *Flowers* solitary at the joints, small; *peduncles* half an inch to an inch and half long; *sepals* roundish, obtuse, spreading; *petals* yellow, obovate.

Hab. Margin of the Schuylkill, above Pughtown: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. This seems to be identical with the R. *reptans*, as figured in *Lightfoot's Flora Scotica;* and I incline to concur with Dr. *Beck*, in the opinion, that it is quite distinct from R. *Flammula* of which Prof. *Hooker* makes it a *variety*.

Page 340. Next before MENTHA CANADENSIS, insert

3.* M. ARVENSIS, *L.* Leaves ovate-lanceolate, oblong, or ovate, cuneately tapering, or rounded, at base, serrate, petiolate; bracts subulate-lanceolate, about as long as the subcampanulate calyx. *Benth. Lab. p.* 178.

FIELD MENTHA.

Plant hirsute. *Root* perennial. *Stem* 9 to 15 inches high, mostly erect, branchiately branching, obtusely angled, with the sides channelled, retrorsely hirsute. *Leaves* 1 to 2 inches long, and half an inch to an inch wide, more or less ovate-lanceolate, and serrate, with an entire cuneately tapering base (sometimes ovate, and rounded at base), punctate, hairy; *petioles* 1 third to half an inch long, hirsute. *Flowers* in axillary sub-fasciculate cymes, appearing verticillate, often sterile; *common peduncle* mostly shorter than the pedicels; *pedicels* smooth; *bracts* subulate-lanceolate, hairy. *Calyx* tubular-campanulate, ribbed, and hirsute. *Corolla* pale blue, or bluish-purple. *Stamens* exserted, often abortive or wanting.

Hab. Road-sides, near West Chester: not common. *Fl.* July. *Fr.* Sept.

Obs. This is a very variable species,—with considerable general resemblance to M. *canadensis*; but is remarkable for its peculiar *odor*,—which has been compared to that of mouldy cheese. I was mistaken in supposing this foreigner to have become extinct. Mr. JOSHUA HOOPES finds it still flourishing near the old locality, about half a mile S. West of the Borough.

Page 344. Next after MONARDA, insert

273* (480.). BLEPHILIA. *Raf. Benth. Lab. p.* 319.

[Perhaps from the Gr. *Blepharis*, an eye-lash; in reference to the ciliate bracts.]

Calyx tubular, sub-cylindric, elongated, striate (13-nerved), bilabiate; upper lip 3-toothed, lower lip shorter, bidentate; throat naked within. *Corolla* ringent; lips sub-equal; upper lip erect, oblong, entire, lower lip spreading, 3-lobed, the lateral lobes roundish-ovate, the middle lobe narrower, oblong, emarginate; tube slender, somewhat exserted. *Stamens* 2, exserted; *anthers* 2-celled; cells divaricate at base, connate at apex.

1. B. CILIATA, *Raf.* Leaves lance-ovate and ovate-oblong, paler or canescent beneath, subsessile; outer bracts ovate, ciliate, colored, as long as the calyx. *Benth. l. c.*

Monarda ciliata. *Willd. Sp.* 1. *p.* 126. *Ait. Kew.* 1. *p.* 52. *Muhl? Catal. p.* 3. *Pursh, Am.* 1. *p.* 19. *Nutt. Gen.* 1. *p.* 17. *Ell. Sk.* 1. *p.* 30. *Lindl. Ency. p.* 22. *Eat. Man. p.* 229. Not of *Mx.* nor *Pers.*

CILIATE BLEPHILIA.

Root perennial. *Stem* 1 to near 2 feet high, erect, simple, often several from the same root, square, often purple above, clothed with a short roughish pubescence, which is longer at the joints, and retrorse on the angles. *Leaves* 1 to 2 or 2 and a half inches long, and half an inch to an inch wide, in rather distant opposite pairs, lance-ovate, or ovate-oblong, tapering to the apex but often rather obtuse (the lower ones smaller and sub-orbicular), serrate-denticulate, abruptly narrowed (often rather rounded) at base, rugose-nerved, the upper surface green and minutely roughish-pubescent, paler and more pubescent beneath, somewhat hairy on the nerves; upper *petioles* very short, the lower ones near half an inch long, ciliate-pubescent. *Flowers* on very short pedicels, in dense sub-globose verticils; *verticils* all distinct, the lower one distant, the upper ones approximated into a *spike*; *bracts* greenish-white, conspicuously ciliate, as long as the calyx,—the outer ones ovate, acute or acuminate, prominently nerved, smoothish, or very minutely pubescent, the inner ones narrower, varying from lance-linear to subulate. *Calyx* about 1 third of an inch long, smoothish and green below, hairy and purplish at summit; *tube* a little curved, and slightly ventricose; *teeth* subulate, tipt with bristly hairs, the 3 upper teeth longer than the 2 lower ones. *Corolla* violet or

bluish-purple, villose externally; upper lip oblong, rather obtuse, nearly flat, lower lip spreading, rather longer than the upper, with dark purplish-brown dots on the upper or inner surface, the middle lobe longer, crenulate. *Stamens* 2, a little exserted. *Style* considerably exserted, nearly equally bifid at apex, pale purple.

Hab. Fields, near West-Chester: rare. *Fl.* June—July. *Fr.*

Obs. This is a rare plant, east of the Alleghany mountains. It was collected by Mr. Joshua Hoopes, in July, 1836, near the Philadelphia road, about two miles East of West-Chester, where it grew in considerable quantity; and I have since learned that it was previously found (viz. in 1834) by Mr. William Hartman, in Strode's orchard, about three miles S. West of the Borough of West-Chester. The herb possesses considerable odor,—something similar to that of *Melissa* or Common-Balm. There is one other species in the U. States.

Page 353. Next after Scutellaria integrifolia, insert

3.* S. galericulata, *L.* Stem erect, somewhat branched; leaves lance-ovate, crenate-serrate, rounded and a little cordate at base, subsessile; flowers rather large, subsolitary, axillary, opposite, secund, on short pedicels. *Beck, Bot. p.* 281.

Capped, or Helmeted Scutellaria.

Root perennial. *Stem* 12 to 18 inches high, square and channelled, with slender spreading branches above, pubescent. *Leaves* 1 to 2 inches long, and 1 third of an inch to near an inch wide, cordate-lanceolate, acute, crenate-serrate, smoothish above, the under surface clothed with a short pubescence, and sprinkled with minute resinous particles; *petioles* very short, pubescent. *Flowers* mostly solitary, axillary, opposite, but both turned to the same side of the stem; *pedicels* rather longer than the petioles. *Calyx* cinereous-pubescent, the galeate appendage rather small. *Corolla* blue at summit, paler below, pubescent, rather large (half an inch, or more, in length), dilated above, tapering below.

Hab. Marshy grounds; Wynn's Meadows: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. Collected at the above locality, July, 1836, by Mr. Joseph Rinehart This is the *var. pubescens, Benth. Lab. p.* 437.

Page 357. Next before Lamium, insert

287* (481.). PHYSOSTEGIA. *Benth. Lab. p.* 504.

[Greek, *Physa*, a bladder, and *Stege*, a covering; alluding to the inflated flowers.]

Calyx tubular-campanulate, finally inflated-campanulate, nearly equally 5-toothed,—or truncate, and obscurely toothed. *Corolla* with a long exserted *tube*, destitute of a ring within; *throat* inflated; *limb* bilabiate,—the upper lip nearly erect, somewhat concave, entire, or emarginate,—the lower lip spreading, 3-lobed, with the lobes rounded, the middle one larger and emarginate. *Stamens* 4, ascending under the upper lip, the 2 lower ones rather longer; *anthers* approximated, 2-celled; cells parallel, distinct, naked. *Style* bifid at apex, with the lobes nearly equal, subulate. *Akenes* smooth.

1. P. virginiana, *Benth.* Calyx acutely and nearly equally 5-toothed. *Benth. l. c.*

Dracocephalum denticulatum. *Willd. Sp.* 3. *p.* 150. *Pers. Syn.* 2. *p.* 133. *Ait. Kew.* 3. *p.* 418. *Muhl. Catal. p.* 56. *Pursh, Am.* 2. *p.* 411.

Nutt. Gen. 2. p. 35. *Ell. Sk. 2. p.* 85. *Torr. Comp. p.* 236. *Lindl. Ency. p.* 510. *Beck, Bot. p.* 278. *Eat. Man. p.* 128.
D. virginianum. *Mx. Am. 2. p.* 10. Also (*fide Benth.*), *Willd. and the Authors here cited.*
Also (*fide Benth.*), D. variegatum, *of the Authors here cited.*
Also (*fide Benth.*), D. obovatum. *Ell. Sk. 2. p.* 86.

VIRGINIAN PHYSOSTEGIA. *Vulgò*—Dragon-head.

Root perennial. *Stem* 1 to 3 feet high, erect, simple, or sparingly branched, 4-angled, smooth, or very minutely pubescent above. *Leaves* opposite, sessile, 1 to 3 or 4 inches long, and 1 fourth to 3 fourths of an inch wide, varying from linear-lanceolate to lance-oblong and obovate-lanceolate, generally acute, denticulate (or sometimes sharply incised-serrate) above the middle, tapering and entire at base, smooth, and often somewhat pellucid-punctate. *Flowers* opposite, and distant, in a slender terminal bracteate raceme,—or sometimes crowded in dense quadrifarious spikes, which are terminal and subterminal (or axillary opposite and crowded, and thus rendered sub-paniculate at the summit of the stem); *racemes*, or *spikes*, 2 or 3 to 6 or 8 inches in length; *bracts* varying from lance-ovato and acuminate to subulate, shorter than the calyx; *pedicels* short; *calyx* 3 or 4 lines long, minutely pubescent, with 5 nearly equal acute teeth. *Corolla* pale purple, or flesh-colored, sometimes variegated, half an inch to an inch long, much dilated above, tapering to the base, finely pubescent externally.

Hab. Along Schuylkill, above Pugh-town: rare. *Fl.* July—Aug. *Fr.*

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. The specimens collected by Mr. RINEHART clearly belong to the *Dracocephalum denticulatum*, of Authors. Mr. *Bentham* has reduced all the *species*, cited above, into *one*; and adds, that they are scarcely entitled to be considered as *varieties*. The *old D. virginianum*, however, to my view, presents a strongly marked variety, if nothing more. I have cultivated it for a number of years, and find it very constant in its characters,—especially its dense paniculate, or rather sub-fasciculate, spikes,—and its more coriaceous and sharply incised-serrate leaves. If Mr. *Bentham* be correct, the above is probably the only species known in the U. States.

Page 373. Next after VERBENA, insert

305* (482). ZAPANIA. *Scop. Nutt. Gen.* 522.
[In honor of *Paul Anthony Zappa*; an Italian Botanist.]

Calyx compressed, 2-parted (or of 2 acuminate conduplicate *sepals ?*). *Corolla* tubular, with the limb unequally 5-lobed. *Stigma* peltately capitate, oblique. *Capsule* thin and evanescent. *Seeds* 2.

Herbaceous: creeping; leaves opposite; flowers in axillary bracteate pedunculate heads. *Nat. Ord.* 220. *Lindl.* VERBENACEÆ.

1. Z. NODIFLORA, *Lam.* Leaves subsessile, cuneate-ovate, and ovate-lanceolate, serrate above; spikes capitate-conic, solitary, on long slender peduncles. *Beck, Bot. p.* 284.
Also ? Z. lanceolata. *Pers. Muhl. Beck*, &c.
Verbena nodiflora. *Willd. Sp.* 1. *p.* 117. *Ait. Kew.* 4. *p.* 39.
Lippia nodiflora. *Mx. Am. 2. p.* 15.
Also ? L. lanceolata. *Mx. l. c.*

NODE-FLOWERING ZAPANIA.

Root perennial. *Stem* 6 to 10 or 12 inches long, mostly procumbent, nodose and radicating at the joints, branching, obtusely quadrangular and striate-sulcate,

roughish with short cinerous closely appressed hairs. *Leaves* 3 fourths of an inch to 2 inches long, and 1 fourth to 2 thirds of an inch wide, varying from lanceolate to cuneate-obovate, mostly rather acute, coarsely serrate above the middle, entire below the middle, and more or less cuneately tapering to a very short petiole, roughish (like the stem and peduncles) with appressed hairs (glabrous, *Ell.*). *Flowers* closely imbricated with *bracts*, in small roundish-ovoid or conical *heads*, on solitary axillary *peduncles* 1 to 3 or 4 inches in length. *Bracts* roughish (like the leaves) with short appressed hairs, yellowish-green, with membranaceous and purple margins, the lower ones broad-ovate, the others rhomboid-cuneate, abruptly acute, and minutely denticulate near the summit. *Calyx* much smaller than the bracts, membranaceous, obcompressed, deeply and sinuately 2-parted, or perhaps composed of 2 lanceolate acuminate conduplicate sepals, which are ciliate on the keel, or back of the duplicature, at each margin. *Corolla* bluish or purplish-white, the *tube* about as long as the bracts, the *limb* somewhat bi-labiate, the upper lip small, emarginate and mostly reflexed, the lower one 3-lobed.

Hab. Margin of the Schuylkill, above Pughtown: rare. *Fl.* July—Aug. *Fr.* Sept.

Obs. Collected in Aug. 1836, by Mr. JOSEPH RINEHART. Authors, generally, describe the *calyx* as "5-toothed;" but I find the description of the faithful and lamented *Elliott* to be much more accurate. The Z. *lanceolata*, of the books, is probably nothing more than a *variety* of this,—and if so, this is the only known species in the U. States, if not of the genus.

Page 391. At the end of the Order, add

[Polanisia graveolens. *Polyandria Monogynia.*]

Page 398. To the *Obs.* on SIDA, add—Six or seven additional species are enumerated in the U. States.

Page 400. Next before CORYDALIS AUREA, insert

1.* C. GLAUCA, *Pursh.* Stem erect, branched; leaves glaucous, decompound, the segments cuneate, trifid; bracts linear-lanceolate, acute, shorter than the pedicels; siliques long, linear, compressed, scarcely torulose. *Beck, Bot. p.* 24.
C. sempervirens. *Pers. Syn.* 2. *p.* 269. *Lindl. Ency. p.* 600.
Fumaria sempervirens. *Willd. Sp.* 3. *p.* 863. *Mx. Am.* 2. *p.* 51. *Ait. Kew.* 4. *p.* 240.

GLAUCOUS CORYDALIS.

Plant smooth and remarkably glaucous. *Root* annual, mostly fusiform, and giving out fibres. *Stem* 12 to 18 inches high, erect, striate-angled, branching. *Leaves* petiolate, somewhat biternately dissected, the primary divisions petiolate, the secondary ones sub-petiolate, deeply 2 or 3-parted, the subdivisions cuneate, 2 or 3-cleft, with the segments oblong, obtuse, or minutely mucronate; *radical* or lower leaves on long petioles. *Racemes* terminal, sub-paniculate; *pedicels* about half an inch long; *bracts* finally much shorter than the pedicels. *Sepals* ovate, acuminate. *Corolla* ochroleucous, with a slight shade of green, and tinged with purple at summit; petals cohering,—the upper one produced at base into a short obtuse spur. *Siliques* an inch to an inch an half long, narrow, linear, compressed, nerved, smooth, acuminate with the persistent style. *Seeds* compressed, roundish-rhomboid, punctate-striate, smooth and shining, purplish-black.

Hab. Hills, above Pughtown: rare. *Fl.* May—July. *Fr.* June—Aug.

Obs. Collected, August, 1836, by Mr. JOSEPH RINEHART.

Page 408. Line 2 from the bottom, for "from the species," read some of the species.

Page 468. Etymology of EURYBIA. According to *De Candolle*, *Eurybia*, in the mythology of the ancients, was the mother of the stars; and hence the name is poetically applied to a genus of Aster-like plants.

Page 539. Line 15 from the bottom, for "*Nat. Ord.* 82." read *Nat. Ord.* 83.

Page 546. Next after CARYA TOMENTOSA, insert

4.* C. AMARA, *Nutt.* Leaflets 7 to 9, oblong-lanceolate, acuminate, sharply serrate, smoothish, the terminal one petiolate; fruit roundish-ovoid, acuminate, with prominent sutures near the apex; pericarp thin; nut smooth, mucronate, with the shell fragile. *Beck, Bot. p.* 336. Juglans amara. *Pursh, Am.* 2. *p.* 638. *Mx. f. Sylva*, 1. *p.* 170 (ICON. *tab.* 33.).

BITTER CARYA. *Vulgò*—Swamp Hickory. Bitter-nut.

Stem 60 to 80 feet high, and 18 inches to 2 or 3 feet in diameter, with numerous slender twiggy branches, and yellow buds,—the bark close and smoothish, finally more or less fissured. *Leaflets* usually in 3 or 4 pairs, with a terminal odd one, 2 to 5 or 6 inches long, and 3 fourths of an inch to near 2 inches wide (the lower pair considerably smaller than the others), oblong-lanceolate, acuminate, serrate, tapering more or less to the base (the lower pair ovate-lanceolate, and rounded at base), smooth above, slightly pubescent beneath, especially on the nerves and midrib,—the lateral leaflets sessile, the terminal one cuneately tapering and acute at base, on a petiole 2 to 4 lines long; *common petiole* 3 to 6 inches long, slender, somewhat pubescent. *Aments* from lateral buds, ternate, or in pairs, 1 to 2 inches long, slender, somewhat pubescent. *Pistillate flowers* terminal, solitary, or in pairs, pedunculate. *Fruit* 3 fourths of an inch to an inch long, orbicular, or subglobose, acuminate, thickly sprinkled with yellow resinous particles,—the *pericarp* thin, with 4 ridged or prominent sutures at summit, partially opening by 4 valves; *nut* smooth, mucronate, with the shell thin and easily cracked; the *kernel* bitter.

Hab. Low grounds; along Brandywine: frequent. *Fl.* May. *Fr.* Octo.

Obs. Since my imperfect account of our *Hickories* was printed, D. TOWNSEND, Esq. has furnished me with good specimens of undoubted C. *amara*, collected by himself along the Brandywine. The species is no doubt frequently confounded with C. *porcina*; and I think they are probably blended by *Marshall*, under the name of *Juglans alba minima*.

Page 580. Line 9 from the bottom, for "2," read 1.

GENERA OF

CHESTER COUNTY PLANTS,

GROUPED IN THE NATURAL ORDERS OF PROF. LINDLEY:

Together with the numerical designation (in this work) of each genus, and the number of *species* belonging to each, in the County, and in the U. States.*

	C. C.	U. S.
ORD. 1. ARALIACEÆ.		
135 Panax	2	2
161 Aralia 2	3	4
	5	6
ORD. 2. UMBELLIFERÆ.		
136 Hydrocotyle	2	5
137 Sanicula	1	1
138 Cicuta	1	2
139 Zizia	3	3
140 Apium	1	1
141 Petroselinum	1	1
142 Carum	1	1
143 Cryptotænia	1	1
144 Sium	1	1
145 Bupleurum	1	1
146 Fœniculum	1	1
147 Thaspium	1	3
148 Angelica	2	3
149 Archemora	1	3
150 Pastinaca	1	1
151 Heracleum	1	1
152 Daucus	1	2
153 Chærophyllum	1	1
154 Osmorhiza	2	2
155 Conium	1	1
156 Coriandrum 21	1	1
	26	36
ORD. 3. RANUNCULACEÆ.		
253 Actæa	2	4
254 Aquilegia	1	1
260 Ranunculus	10	20
261 Hepatica	1	1
262 Anemone	2	8
263 Thalictrum	4	4
264 Clematis	2	10
265 Caltha	1	4
266 Hydrastis 9	1	1
	24	53
ORD. 4. PAPAVERACEÆ.		
247 Chelidonium	1	1
248 Argemone	1	1
249 Papaver	1	2
250 Sanguinaria 4	1	1
	4	5
ORD. 5. NYMPHÆACEÆ.		
252 Nuphar 1	1	3
ORD. 7. HYDROPELTIDEÆ.		
260* Hydropeltis 1	1	1
ORD. 8. PODOPHYLLEÆ.		
251 Podophyllum 1	1	1
ORD. 9. CRUCIFERÆ.		
310 Erophila	1	1
311 Cochlearia	1	2
312 Camelina	1	1
313 Capsella	1	1
314 Lepidium	2	4
315 Barbarca	1	2
316 Arabis	3	7
317 Cardamine	3	8
318 Dentaria	1	6
319 Sisymbrium	4	8
320 Brassica	3	3
321 Sinapis	2	2
322 Raphanus 13	1	1
	24	46

* The number of *species in the U. States*, as here set down, must, of course, in many instances, be regarded only as an approximation to the exact amount.

	C. C.	U. S.
ORD. 10. FUMARIACEÆ.		
329 Dielytra	2	4
330 Adlumia	1	1
331 Corydalis	2	3
332 Fumaria 4	1	1
	6	
ORD. 11. CAPPARIDEÆ.		
247* Polanisia 1	1	1
ORD. 13. ANNONACEÆ.		
257 Asimina 1	1	4
ORD. 15. MAGNOLIACEÆ.		
258 Magnolia	1	7
259 Liriodendron 2	1	1
	2	8
ORD. 21. LAURINEÆ.		
202 Laurus 1	2	8
ORD. 22. BERBERIDEÆ.		
166 Leontice 1	1	1
ORD. 23. MENISPERMEÆ.		
456 Menispermum 1	1	2
ORD. 24. MALVACEÆ.		
325 Malva	2	5
326 Althæa	1	2
327 Hibiscus	2	10
328 Sida 4	2	9
	7	26
ORD. 29. TILIACEÆ.		
243 Tilia 1	1	4
ORD. 36. HYPERICINEÆ.		
255 Ascyrum	1	4
256 Hypericum 2	6	28
	7	32
ORD. 38. SAXIFRAGEÆ.		
130 Heuchera	1	5
214 Saxifraga	2	5
215 Chrysosplenium	1	1
216 Mitella 4	1	4
	5	15
ORD. 42. HAMAMELIDEÆ.		
82 Hamamelis 1	1	1
ORD. 45. GROSSULACEÆ.		
122 Ribes 1	4	22
ORD. 47. ONAGRARIÆ.		
76 Isnardia	2	14
193 Epilobium	2	8
194 Œnothera	2	20
195* Gaura 4	1	6
	7	48
ORD. 49. CIRCÆACEÆ.		
7 Circæa 1	1	2
ORD. 52. SALICARIÆ.		
226 Cuphea 1	1	1
ORD. 54. MELASTOMACEÆ.		
196 Rhexia 1	1	9
ORD. 62. ARISTOLOCHIÆ.		
412 Aristolochia	1	4
413 Asarum 2	1	3
	2	7
ORD. 64. SANTALACEÆ.		
124 Thesium	1	1
125 Nyssa 2	1	5
	2	6
ORD. 65. THYMELEÆ.		
198 Direa 1	1	1
ORD. 72. SANGUISORBEÆ.		
74 Sanguisorba	1	1
164 Floerkea 2	1	1
ORD. 73. ROSACEÆ.		
235 Spiræa	2	12
236 Gillenia	1	2
237 Agrimonia	1	4
238 Geum	2	10
239 Potentilla	3	18
240 Fragaria	1	2
241 Rubus	7	17
242 Rosa 8	3	12
	20	77
ORD. 74. POMACEÆ.		
231 Cratægus	7	17
232 Amelanchier	2	2
233 Pyrus	4	7
234 Cydonia 4	1	1
	14	27
ORD. 75. AMYGDALEÆ.		
227 Persica	2	2
228 Armeniaca	2	2
229 Prunus	3	7
230 Cerasus 4	4	8
	11	19

	C. C.	U. S.
ORD. 77. LEGUMINOSÆ.		
334 Baptisia	1	8
335 Crotalaria	1	3
336 Medicago	2	2
337 Trifolium	5	8
338 Galactia	1	4
339 Tephrosia	1	5
340 Robinia	1	3
341 Stylosanthes	1	1
342 Desmodium	12	20
343 Lespedeza	7	3
344 Cicer	1	1
345 Faba	1	1
346 Vicia	3	7
347 Ervum	2	2
348 Pisum	1	2
349 Amphicarpæa	1	2
350 Apios	1	1
351 Phaseolus	4	6
352 Lupinus	1	7
353 Cassia	3	10
354 Cercis 21	1	1
	51	97
ORD. 78. URTICEÆ.		
81 Parietaria	1	2
419 Boehmeria	1	2
420 Urtica	3	8
449 Humulus	1	1
450 Cannabis 5	1	1
	7	14
ORD. 79. ULMACEÆ.		
133 Ulmus	2	5
134 Celtis 2	2	4
	4	9
ORD. 80. ARTOCARPEÆ.		
421 Morus 1	2	2
ORD. 82. CUPULIFERÆ.		
428 Quercus	12	34
429 Castanea	2	3
430 Fagus	1	2
431 Corylus 4	1	2
	16	41
ORD. 83. BETULINEÆ.		
422 Alnus	1	3
432 Betula	2	9
433 Carpinus	1	1
434 Ostrya 4	1	1
	5	14
ORD. 84. SALICINEÆ.		
447 Salix	10	35
454. Populus 2	3	10
	13	45
ORD. 85. PLATANEÆ.		
435 Platanus 1	1	1
ORD. 86. MYRICEÆ.		
418 Comptonia 1	1	1
ORD. 87. JUGLANDEÆ.		
436. Juglans	2	2
437 Carya 2	5	9
	7	11
ORD. 88. EUPHORBIACEÆ.		
414 Euphorbia	5	21
439 Phyllanthus	1	1
440 Acalypha 3	1	2
	7	24
ORD. 93. CELASTRINEÆ.		
113 Celastrus	1	1
114 Euonymus 2	2	4
	3	5
ORD. 96. RHAMNEÆ.		
112 Ceanothus 1	1	5
ORD. 97. STAPHYLEACEÆ.		
160 Staphylea 1	1	1
ORD. 101. ACERINEÆ.		
200 Acer 1	4	10
ORD. 104. VITES.		
115 Vitis	4	6
116 Ampelopsis 2	1	4
	5	10
ORD. 113. ANACARDIACEÆ.		
159 Rhus 1	5	9
ORD. 122. GERANIACEÆ.		
323 Geranium 1	2	6
ORD. 123. OXALIDEÆ.		
324 Oxalis 1	2	8
ORD. 124 TROPÆOLEÆ.		
197 Tropæolum 1	1	1
ORD. 126. BALSAMINEÆ.		
110. Impatiens 1	2	2
ORD. 129. POLYGALEÆ.		
333 Polygala 1	4	21

	C. C.	U. S.
ORD. 130. VIOLACEÆ.		
111 Viola 1	11	27
ORD. 134. CISTINEÆ.		
66 Lechea	2	5
244. Helianthemum 2	1	4
	3	9
ORD. 137. DROSERACEÆ.		
163 Drosera 1	1	3
ORD. 139. LINEAE.		
162 Linum 1	2	5
ORD. 140. CARYOPHYLLEÆ.		
65 Mollugo	1	1
217 Saponaria	1	1
218 Silene	3	13
219 Stellaria	4	7
220 Arenaria	3	13
221 Cerastium	5	7
222 Agrostemma 7	1	1
	18	43
ORD. 144. PORTULACEÆ.		
109 Claytonia	1	3
245 Portulaca	1	1
246 Talinum 3	1	1
	3	5
ORD. 147. CRASSULACEÆ.		
223 Penthorum	1	1
224 Sedum 2	1	5
	2	6
ORD. 150. ILLECEBREÆ.		
123 Anychia 1	1	1
ORD. 151. AMARANTACEÆ.		
423 Amaranthus 1	3	10
ORD. 153. CHENOPODEÆ.		
131 Chenopodium	6	11
132 Beta	1	1
451 Spinacia 3	1	1
	8	13
ORD. 154. PHYTOLACCEÆ.		
225 Phytolacca 1	1	1
ORD. 156. POLYGONEÆ.		
189 Rumex	3	13
201 Polygonum	15	25
203 Rheum 3	1	1
	19	39

	C. C.	U. S.
ORD. 159. SAURUREÆ.		
190 Saururus 1	1	1
ORD. 163. PODOSTEMEÆ.		
10 Podostemum 1	1	2
ORD. 164. CALLITRICHINEÆ.		
1 Callitriche 1	1	1
ORD. 165. CERATOPHYLLEÆ.		
424 Ceratophyllum 1	1	2
ORD. 166. ILICINEÆ.		
83 Ilex	1	8
167 Prinos 2	1	7
	2	15
ORD. 170. ERICEÆ.		
205 Gaultheria	1	3
206 Epigæa	1	1
207 Andromeda	3	19
208 Kalmia	2	5
209 Rhododendron	3	8
210 Clethra 6	1	4
	11	40
ORD. 172. VACCINIEÆ.		
195 Oxycoccus	1	2
204 Vaccinium 2	5	25
	6	27
ORD. 173. PYROLACEÆ.		
211 Pyrola	5	11
212 Monotropa 2	2	3
	7	14
ORD. 174. CAMPANULACEÆ.		
118 Campanula 1	3	6
ORD. 175. LOBELIACEÆ.		
117 Lobelia 1	5	10
ORD. 181. CUCURBITACEÆ.		
441 Lagenaria	1	1
442 Cucumis	4	4
443 Sicyos	1	1
444 Momordica	1	2
445 Cucurbita 5	3	3
	10	11
ORD. 182. PLANTAGINEÆ.		
77. Plantago 1	3	13
ORD. 184. DIPSACEÆ.		
68 Dipsacus 1	2	1
ORD. 185. VALERIANEÆ.		
11 Valerianella 1	1	2
ORD. 186. COMPOSITÆ.		
355 Centaurea	1	5

	C. C.	U. S.
356 Carthamus	1	1
357 Arctium	1	1
358 Carduus	7	9
359 Cichorium	1	1
360 Krigia	1	1
361 Cynthia	1	2
362 Tragopogon	1	1
363 Lactuca	2	5
364 Leontodon	1	1
365 Prenanthes	1	9
366 Sonchus	4	8
367 Hieracium	3	10
368 Vernonia	1	6
369 Liatris	1	22
370 Kuhnia	2	3
371 Eupatorium	9	30
372 Mikania	1	2
373 Solidago	16	50
374 Aster	13	75
375 Eurybia	2	4
376 Sericocarpus	2	3
377 Erigeron	5	15
378 Diplopappus	4	16
379 Inula	1	1
380 Polymnia	2	2
381 Xanthium	2	3
382 Ambrosia	2	7
383 Heliopsis	1	1
384 Rudbeckia	3	14
385 Actinomeris	1	2
386 Helianthus	5	25
387 Bidens	4	6
388 Helenium	1	2
389 Anthemis	3	3
390 Achillea	1	1
391 Chrysanthemum	1	1
392 Artemisia	2	12
393 Tanacetum	1	2
394 Gnaphalium	6	8
395 Arnica	1	4
396 Senecio	4	14
397 Cacalia 43	1	5
	123	393

ORD. 189. STELLATÆ.

69 Galium	9	15
70 Rubia 2	1	2
	10	17

ORD. 190. CINCHONACEÆ.

	C. C.	U. S.
67 Cephalanthus	1	1
71 Diodia	1	4
72 Hedyotis	2	10
73 Mitchella 4	1	1
	5	16

ORD. 191. CAPRIFOLIACEÆ.

75 Cornus	4	8
119 Diervilla	1	1
120 Lonicera	2	6
121 Triosteum	1	2
157 Viburnum	5	15
158 Sambucus	1	2
213 Hydrangea 7	1	3
	15	37

ORD. 192. LORANTHEÆ.

448 Viscum 1	1	1

ORD. 195. ASCLEPIADEÆ.

129* Gonolobus	1	4
129 Asclepias 2	11	20
	12	24

ORD. 196. APOCYNEÆ.

128 Apocynum 1	2	3

ORD. 197. GENTIANEÆ.

78 Bartonia	1	2
79 Obolaria	1	1
96 Sabbatia	1	9
97 Erythræa	1	1
126 Gentiana 5	3	10
	7	23

ORD. 199. CONVOLVULACEÆ.

101 Convolvulus	6	14
127 Cuscuta 2	2	2
	8	16

ORD. 200. POLEMONIACEÆ.

99 Polemonium	1	1
100 Phlox 2	5	17
	6	18

ORD. 202. EBENACEÆ.

199 Diospyros 1	1	1

ORD. 205. OLEACEÆ.

2 Ligustrum	1	1
3 Chionanthus	1	1

	C. C.	U. S.
8 Fraxinus 3	3	8
	—	—
	5	10
ORD. 207. PRIMULACEÆ.		
94 Anagallis	1	1
95 Lysimachia	4	10
96* Samolus	1	1
192 Trientalis 4	1	1
	—	—
	7	13
ORD. 208. LENTIBULARIÆ.		
6 Utricularia 1	1	10
ORD. 210. OROBANCHEÆ.		
308 Epiphegus	1	1
309 Orobanche 2	2	4
	—	—
	3	5
ORD. 211 SCROPHULARINEÆ		
4 Veronica	8	10
5 Leptandra	1	1
294 Gratiola	1	7
295 Lindernia	1	5
296 Gerardia	6	14
297 Mimulus	2	4
298 Linaria	1	3
299 Chelone	1	3
300 Pentstemon	1	9
301 Scrophularia	1	2
302 Buchnera 11	1	1
	—	—
	24	59
ORD. 212. RHINANTHACEÆ.		
305 Melampyrum	1	2
306 Pedicularis	2	2
307 Euchroma 3	1	2
	—	—
	4	6
ORD. 213. SOLANEÆ.		
102 Datura	1	1
103 Nicotiana	1	2
104 Verbascum	2	4
105 Lycium	1	2
106 Solanum	6	10
107 Physalis	2	6
108 Capsicum 7	1	1
	—	—
	14	26
ORD. 214. ACANTHACEÆ.		
6* Justicia 1	1	3
ORD. 217. BIGNONIACEÆ.		
293 Catalpa 1	1	1
ORD. 220. VERBENACEÆ.		
303 Phryma	1	1
304 Verbena	2	10
305* Zapania 3	1	1
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	4	12
ORD. 221. LABIATÆ.		
267 Ocymum	1	1
268 Lavandula	1	1
269 Mentha	4	4
270 Lycopus	2	3
271 Salvia	2	7
272 Monarda	1	7
273* Blephilia	1	2
273 Pycnanthemum	4	10
274 Origanum	1	1
275 Majorana	1	1
276 Thymus	2	2
277 Satureja	1	1
278 Hyssopus	1	1
279 Collinsonia	1	6
280 Cunila	1	1
281 Hedeoma	1	1
282 Melissa	2	5
283 Prunella	1	1
284 Scutellaria	6	10
285 Lophanthus	2	4
286 Nepeta	2	2
287* Physostegia	1	1
287 Lamium	2	2
288 Leonurus	2	2
289 Stachys	2	4
290 Marrubium	1	1
291 Trichostema	1	2
292 Teucrium 28	1	2
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ORD. 222. BORAGINEÆ.		
85 Pulmonaria	1	3
86 Lithospermum	1	6
87 Batschia	1	2
88 Onosmodium	1	2
89 Echium	1	1
90 Myosotis	2	4
91 Symphytum	1	1
92 Echinospermum	1	2
93 Cynoglossum 9	2	4
	—	—
	11	25

ORD. 226. HYDROPHYLLEÆ.

	C. C.	U. S.
98 Hydrophyllum 1	1	3

ORD. 228. CONIFERÆ.

438 Pinus	4	16
457 Juniperus	2	3
458 Taxus 3	1	1
	7	20

ORD. 229. ALISMACEÆ.

191 Alisma	1	3
425 Sagittaria 2	2	8
	3	11

ORD. 231. HYDROCHARIDEÆ.

446 Vallisneria	1	1
455 Udora 2	1	1
	2	2

ORD. 232. COMMELINEÆ.

165 Tradescantia 1	1	2

ORD. 233. XYRIDEÆ.

12 Xyris 1	1	4

ORD. 236. HYPOXIDEÆ.

173 Hypoxis 1	1	3

ORD. 239. IRIDEÆ.

13 Sisyrinchium	2	2
14 Iris 2	1	8
	3	10

ORD. 240. ORCHIDEÆ.

398 Goodyera	1	2
399 Spiranthes	2	2
400 Arethusa	1	1
401 Pogonia	2	3
402 Triphora	1	1
403 Calopogon	1	1
404 Orchis	1	1
405 Platanthera	1	2
406 Habenaria	8	26
407 Corallorhiza	3	3
408 Aplectrum	1	1
409 Liparis	2	2
410 Microstylis	1	1
411 Cypripedium 14	2	6
	27	52

ORD. 244. JUNCEÆ.

182 Juncus	7	16
183 Luzula 2	1	4
	8	20

ORD. 245. MELANTHACEÆ.

	C. C.	U. S.
176 Uvularia	2	4
184 Melanthium	1	4
185 Veratrum	1	3
186 Helonias 4	2	6
	6	17

ORD. 246. PONTEDEREÆ.

15 Schollera	1	1
16 Heteranthera	1	2
168 Pontederia 3	1	1
	3	4

ORD. 247. ASPHODELEÆ.

169 Allium	6	9
170 Aletris	1	1
171 Asparagus	1	1
172 Ornithogalum 4	1	2
	9	13

ORD. 249. SMILACEÆ.

174 Polygonatum	1	4
175 Smilacina	3	5
187 Gyromia	1	1
188 Trillium	1	10
452 Smilax 5	3	14
	9	34

ORD. 250. DIOSCOREÆ.

453 Dioscorea 1	1	1

ORD. 251. LILIACEÆ.

177 Erythronium	1	3
178 Lilium	3	5
179 Hemerocallis 3	1	1
	5	9

ORD. 255. TYPHACEÆ.

416 Typha	2	2
417 Sparganium 2	1	3
	3	5

ORD. 256. AROIDEÆ.

80 Symplocarpus	1	1
180 Orontium	1	1
181 Acorus	1	1
426 Arum	2	3
427 Rensselaeria 5	1	1
	6	7

	C. C.	U. S.
ORD. 258. FLUVIALES.		
84 Potamogeton	4	10
415 Caulinia 2	1	2
	5	12
ORD. 260. PISTIACEÆ.		
9 Lemna 1	3	5
ORD. 261. GRAMINEÆ.		
25 Paspalum	2	10
26 Digitaria	3	5
27 Panicum	12	42
28 Setaria	4	8
29 Cenchrus	1	1
30 Aristida	2	10
31 Cinna	1	1
32 Trichodium	2	3
33 Agrostis	7	22
34 Muhlenbergia	2	2
35 Phleum	1	2
36 Spartina	1	4
37 Arundo	1	1
38 Calamagrostis	2	2
39 Phalaris	1	2
40 Anthoxanthum	1	1
41 Aira	2	4
42 Koeleria	2	5
43 Avena	3	4
44 Danthonia	1	2
45 Bromus	3	5
46 Festuca	4	12
47 Glyceria	1	2
48 Tricuspis	1	1
49 Poa	11	25
50 Dactylis	1	1
51 Atheropogon	1	2
52 Eleusine	1	2
53 Secale	1	1
54 Elymus	4	6
55 Hordeum	2	4
56 Triticum	2	2
57 Lolium	1	2
58 Andropogon	5	12
59 Sorghum	1	1
60 Holcus	1	3
61 Leersia	2	3
62 Zizania	1	2
63 Zea	1	1
64 Tripsacum 40	1	1
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ORD. 262. CYPERACEÆ.		
17 Cyperus	5	25
18 Mariscus	2	3
19 Dulichium	1	1
20 Scirpus	14	38
21 Eriophorum	2	5
22 Rhynchospora	3	30
23 Sclcria	2	8
24 Carex 8	35	135
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ORD. 263. EQUISETACEÆ.		
459. Equisetum 1	3	6
ORD. 264. FILICES.		
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461 Onoclea	1	1
462 Aspidium	7	15
463 Woodsia	2	4
464 Asplenium	5	7
465 Pteris	2	4
466 Adiantum	1	1
467 Cheilanthes	1	2
468 Dicksonia	1	1
469 Osmunda	3	4
470 Ophioglossum	1	2
471 Botrychium 12	3	4
	29	51
ORD. 265. LYCOPODIACEÆ.		
472 Lycopodium	6	13
473 Isoetes 2	1	1
	7	14

Prof. LINDLEY arranges the known flowering and filicoid plants into 250 NATURAL ORDERS. In CHESTER COUNTY, there are plants belonging to 128 of those *Orders*,—comprising 482 *Genera*, and 1073 *Species*. Of these species there are cultivated, 92
Introduced and naturalized, about 138

230
Indigenous 843

Total 1073

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OF THE

GENERA AND SPECIES.

☞ *Synonyms* are printed in *Italic*. ☜

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☞ N. B. The compositor having exhausted his font of *figures*, in setting up these last pages of Index, was under the necessity of using *dashes*, instead. The reader will therefore please bear in mind, that wherever a dash (—) occurs, in connection with figures, it indicates that the figures immediately above it are to be considered as repeated.